LITERATURE OF MANUFACTURERS

Catalogues, bulletins and other direct advertising material recently issued.

Manufacturers are requested to send copies of new trade literature promptly to Electric Refrigeration News.

Absopure-Larkin

Nine types of Absopure-Larkin aluminum plate coils are illustrated in a folder published by Absopure Refrigeration Corp., 1560 Theodore St., Detroit, Mich. These nine types are made in a wide range of sizes, each size having a vertical cooling surface equal to the outside area of a standard cooler display case or refrigerator.

E. T. L.

Bulletin 106, entitled, "Refrigeration Tests," issued by Electrical Testing Laboratories, 80th St. and East End Ave., New York, N. Y., states the procedure followed in checking refrigeration equipment. Average room temperature, average refrigerator temperature, kw.-hrs. used per 24 hours, and the number of machine operations per 24 hours are checked in the Laboratories.

Roessler & Hasslacher

Folder No. 487 of the Roessler & Hasslacher Chemical Co., 10 E. 40th St., New York, N. Y., announces that a branch office has been opened at 62 Richmond Street, West, Toronto, Canada. Parke H. Masters, formerly with Roessler & Hasslacher's Boston office, is in charge of the new branch. The folder, which listed December prices on company products, also carried season greetings.

Tramrail

A general description of Tramrail Gantry cranes and overhead material handling systems is given in a catalog issued by Cleveland Electric Tramrail, Wickliffe, Ohio. The catalog describes types of single rail dipping machines, elevation transfer sections and bridges, furnace charging carriers, tramrail guided hooks, and many other parts of overhead carrying systems.

Standard

Equipment and machinery for conveying of materials and merchandise, such as roller conveyors, spiral chutes, belt and slat conveyors, incline and vertical lifts, and portable loaders and unloaders, are listed in a catalog issued by Standard Conveyor Co., North St. Paul, Minn. The catalog is divided into three parts: part one gives general uses, advantages and applications of Roller conveyors to specific industries; part two is made up of illustrations, showing Gravity Roller conveyors in use in various industries, while part three is a technical section, giving descriptions and illustrations of Roller conveyor construction.

A NEW personality in electric refrigeration advertising, the "Snowman" of Copeland Products, Inc., is "getting a play" in his first Christmas season. Copeland distributors throughout the country are making much of the company's mascot and whenever possible are turning him into an actual snow man in window displays by means of the refrigeration process he advertises.

On the left is the "Snowman" display of Copeland Refrigeration of California, Inc., Los Angeles. In the center is shown the lithographed picture which provided the model for the displays. On the right is the "Snowman" in the Buffalo, N. Y., windows of B. I. Cooper Sales Co. He is made up of 400 feet of ¼-inch copper tubing built around a framework. His eyes and nose are colored electric light bulbs that flash intermittently. Concealed Copeland condensing equipment keeps the "Snowmen's" frost coats fresh and white.

BIG RAYON PLANTS INSTALL KELVINATORS

Knoxville, Tenn.—Kelvinator electric refrigerators have been installed in the chemical laboratory and the officers' clubhouse of the American Bemberg-Glanzstoff Corporation at Elizabethton, Tenn. According to Charles P. Humphries, manager of the Kelvinator Department, King Mantel and Furniture Co., which made the installation, the two rayon silk plants of Bemberg-Glanzstoff are the largest of their kind in the world. In the Bemberg plant the cheapest grade of cotton is made into rayon silk, while in the Glanzstoff plant wood pulp is transformed into shimmering rayon.

KINGSBURY JOINS NEW YORK ADVERTISING AGENCY

Detroit, Mich.—Gordon Kingsbury, formerly director of advertising of the Kelvinator Corp., and more recently in charge of radio broadcast advertising for the General Motors Corp. in Detroit, has joined the advertising agency of Young and Rubicam, New York City, where he will assist in the contact work with the General Food Corp., a client of the agency.

REQUESTS FOR INFORMATION

Readers who can assist in furnishing correct answers to inquiries, or who can supply additional information, are invited to address Electric Refrigeration News, referring to the query number.

Refrigeration Council

Query No. 319—"We would appreciate receiving the address of the Refrigeration Council, as we would like the information for our files."

Answer—Manufacturers who were members of the former Refrigeration Manufacturers' Council were organized last May as the Refrigeration Division of the National Electric Manufacturers' Association, with headquarters at 420 Lexington Ave., New York City.

Devon

Query No. 320—"We are told that there will be marketed soon a household refrigerator which will use air as a refrigerant instead of a chemical. We would appreciate it very much if you can give us any information as to the maker of same."

Answer—Devon Manufacturing Co., 2 Brooks St., Brighton, Mass., manufactures the Devon refrigerator which uses air as a refrigerant.

Patent

Query No. 321—"We are anxious to obtain information in regard to a patent which, we understand, has recently been filed in the United States by Professor Einstein for electric refrigerators. We would like to have details in regard to the invention, and, if possible, copy of the specification or provisional specification if already filed. If you can give us the name and date of this we shall greatly appreciate it."

Ethyl Chloride

Query No. 322—"Could you give me names of companies that make ethyl chloride for use as a refrigerant, or tell me where to buy same?"

Answer—Roessler & Hasslacher, 10 East 40th St., New York City, N. Y.

Handbook

Query No. 323—"Can you recommend to us a good mechanical or refrigeration engineer's handbook that contains different tables on which we often require information. For instance, at the present time we are wondering how many gallons of water we can pass through a one-half inch pipe during a certain period of time, under a given pressure, also how much refrigeration is required, depending upon the rate of flow.

"Possibly a standard mechanical engineer's handbook would give us most of the information we require, but we would like to know if there is a refrigeration engineer's handbook published."

Query No. 324—Can you tell us if it is possible to get a copy of the papers read at the twenty-fifth anniversary of the American Society of Refrigerating Engineers, held at Hotel Pennsylvania, New York, December 4-7, 1929?

Answer—Proceedings of the American Society of Refrigerating Engineers are published in Refrigerating Engineering, the official monthly journal.

HAIGHT JOINS NORTHEASTERN RADIO

Boston, Mass.—E. J. Haight, who for more than four years has been traveling service manager of electric refrigeration for Copeland Sales Co., has joined Northeastern Radio, Inc., of this city, in the capacity of service manager of the Copeland division.

Mr. Haight is now making a tour of the territory in order to make the acquaintance of all Copeland dealers.

THE CONDENSER

ADVERTISING RATE fifty cents per line (this column only).

SPECIAL RATE if paid in advance — Positions Wanted — fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each. All other classifications—fifty words or less, one insertion $3.00, additional words six cents each. Three insertions $8.00, additional words sixteen cents each.

POSITIONS AVAILABLE

WANTED—Experienced Frigidaire salesmen, 4 household and 2 commercial. Account of warm climate and tourist business this is our best sales season. Address W. H. Forgy, Sales Manager, 102 E. Lafayette Street, Tampa, Florida.

POSITIONS WANTED

SALES MANAGER—Available January 1st. Can some distributor use an executive with seven years' experience in the refrigeration industry? Prefer to connect with company having large enough territory to develop large wholesale dealer business. Have full knowledge of all branches of business. Will move to any part of United States if opening has a future. Address Box 223.

WANT Permanent Southern or Southwestern Connection. Ten years in sales and sales management work. Last three years and at present with one G. E. distributor in Northern state. Experience in all phases of sales work—retail management, dealer and utility contact and salesmen training. Now employed. Box 216.

If you need an expert refrigeration and oil burner service manager, write M. L. Holcomb, 509 West Miner Street, West Chester, Pa. For reference write N. W. Durnall Company, 125 Church Street, West Chester, Pa.

SALES EXECUTIVE—There is a sales executive available, with an excellent knowledge of the electric refrigeration industry, who can inject original, productive ideas into your sales promotion department, or build a sound, business-getting sales organization. Box No. 225.

EXPERIENCED REFRIGERATION ENGINEER—Desires to get in touch with refrigeration manufacturer requiring the services of a chief engineer. Thoroughly versed in engineering, design and production methods. More than ten years' experience in electric refrigeration. Will consider any locality—Detroit or vicinity preferred. Address Box No. 217.

CHIEF ENGINEER, with ten years' electric refrigeration design, development, and production experience, wishes to get in touch with a manufacturer. Box 203.

Would like to get in touch with a company in the process of development or manufacture of small refrigeration machines for household or commercial purposes. Have had nine years' experience in the design and research of refrigeration equipment. Tests of all kinds, including Volumetric and Calorimeter, for capacity and efficiency. Box 224.

MISCELLANEOUS

FOR SALE—50 Colonial (with lids) and 50 United (without lids) 5-foot cabinets, 2" cork lined, Duco finish, all white. All new, good condition, will accept any reasonable offer for entire lot. Box 221.

FOR SALE—One model Ten and one model Five Excelsior compressors in original factory crates. We have discontinued refrigeration and will sacrifice these new machines to move them before December 31st. Will accept any reasonable offer. Terms, 25 per cent with order, balance sight draft. Box No. 215.

FOR EASTERN DEALERS
WE MAINTAIN THE LARGEST STOCK OF FITTINGS AND TUBING IN THE EAST. GET OUR CATALOGUE AND PRICES.
DOMESTIC UTILITIES
DIVISION OF THE REFRIGERATION CORP. OF MARYLAND
Plant and Offices—Arlington, Baltimore, Maryland

Refrigerator Door Hardware
Dent Hardware has been specified by the Leading Refrigerator Manufacturers For over thirty-five years.
The Dent Hardware Co. Fullerton, Pa.

The Imitation Food Products Co.
(Branch of The Artistic Production Co.)
107 Lawrence Street
Brooklyn, N. Y.
Ask for our catalog of January 1, 1930. Direct sales only. "Indispensable with refrigerator display."

Subscription Order
ELECTRIC REFRIGERATION NEWS
550 MACCABEES BUILDING, DETROIT, MICH.
Please enter subscription to Electric Refrigeration News.
United States and Possessions:
☐ $2.00 per year. ☐ Three years for $5.00
All other Countries:
☐ $2.25 per year. ☐ Two years for $4.00
I am enclosing payment in the form of
☐ Check ☐ P. O. Order ☐ Cash
Name.....
Street Address.....
City and State.....
Remarks:.....

Mechanical Engineering Instructors
Mechanical Research Engineers
Prominent and progressive manufacturer of domestic electric appliances in Ohio would like to add to its laboratory staff a Mechanical Engineer of the following qualifications: Mechanical Engineer. Preferably 1923 to 1926 graduate, age 23-28, married. Three to six years commercial laboratory or teaching experience would be admirable qualifications for this position. Advanced engineering degrees preferable but not essential. Applicant must be of analytical type of mind and naturally inclined toward research and development of domestic appliances, such as refrigerators, washing machines, vacuum cleaners, ironers, etc. Moderate starting salary but excellent future and permanent position is available for competent applicant. Box 213.

FREE FACTS YOU SHOULD KNOW About ELECTRIC REFRIGERATION
Mail Coupon For Big New Book on Electric Refrigeration. Chock Full of Valuable Facts. Tells How to Win Promotion and Increased Pay. Sent FREE Without Obligation.
NOW . . . INCREASE YOUR EARNING POWER
Here's great news! As a result of a wonderful new method of training, you can now master every principle and practice of electric refrigeration at home in spare time—quickly and easily! This training valuable to service men, salesmen, dealers, executives, factory and office workers. Praised and endorsed by Servel Kelvinator, General Electric, Champion, Zerozone, Copeland, etc.
Easy to Learn—Simple as A. B. C.
Unlike ordinary schooling. No textbooks. No study drudgery. You learn quickly from fascinating lessons under guidance of experts. Charts, diagrams, drawings help you. Amazing low cost—easy payments. Pay increases more than cover low fee. Mathias, Pa., writes: "My salary was raised 15% four months after enrolling and another increase is in sight."
It will pay you to get this valuable book and full details about this pay-raising training AT ONCE! No obligation—so act QUICK!
MANUFACTURERS & DEALERS
Enroll your men for this training NOW. Trained graduates available. Inquiries invited!

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Send me at once without cost or obligation your Big New Book of Facts and full details of your new easy training in Electric Refrigeration.
Name .....
Address .....
City ..... State .....
Position .....

ELECTRIC REFRIGERATION NEWS

The business newspaper of the refrigeration industry

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MEAT PACKERS SEE BIG ECONOMIES IN QUICK FROZEN FOOD

Representatives Attend Meeting Addressed by Birdseye

Detroit, Mich.—Five kinds of quick frozen foods were served at the dinner meeting of the Detroit Section, American Society of Refrigerating Engineers, held at the Hotel Statler, Monday evening, January 6. The frozen food was furnished by Clarence L. Birdseye, of the General Foods Corporation, Gloucester, Mass., who then addressed the meeting and explained the process and its possibilities. Representatives of the large meat packing companies in Chicago were present and took part in the discussion which followed.

Many of the wives of the Detroit engineers partook of the dinner and passed judgment on the quality of the various foods which had undergone the quick freezing process. The five items on the menu which were given special attention because of their previously frozen conditions were shrimp served as a cocktail, clams in a broth, and the entree of beef steak and peas. Mr. Birdseye explained that the seafood and the peas had been kept in frozen condition for several months, while the steak was delivered by the Hotel Statler in Boston to the General Foods plant only a few days prior to the dinner. The meat was frozen and shipped to the Detroit Statler in order to provide a demonstration of the process when applied to beef.

Slides were used by Mr. Birdseye to show microscopic pictures contrasting the difference in the effects of ordinary slow freezing and of the quick freezing process on the cellular structure of fish and other foods. In the case of slow freezing, ice crystals are formed which break down the cells and permit the cell fluids to flow away, thus causing a distinct loss in the taste and nutritive value of the food when it is thawed out. Quick freezing, on the other hand, acts on the meat cells in such a way that it does not alter the structure, and, when thawed out, the flesh is in the same condition as before. There is no loss in flavor or quality, and the meat has just the same appearance after thawing as it did before the application of the process.

Mr. Birdseye, who is widely recognized as a pioneer in the development of the quick freezing process, made it clear to his audience that there are many problems as yet unsolved and that the process has not been uniformly successful when applied to all kinds of foods. In particular, he emphasized the difference in results between animal and vegetable food products.

Owing to the fact that fish has long been known as one of the most difficult foods to protect against deterioration, his early experiments were in this field. Being aware of the prejudice on the part of the public against fish which has been frozen in the ordinary manner, he felt that if the process could be worked out successfully for this type of food it would eventually be possible to secure satisfactory results in connection with other foods. Large quantities of fish are now being frozen by the Birdseye equipment, and shipments have been made to all parts of the country with excellent results. Meats of various kinds are also being treated and offered to the public in package form, and the demand for the product is spreading rapidly. Good results have been secured with some vegetables and fruits, while others have not responded in the desired manner.

Several other processes, in addition to the one developed by Mr. Birdseye, are now in use, and a considerable number of companies and individuals interested in the production and distribution of food products are experimenting with the idea. The whole subject has attracted widespread attention throughout the food industries. Quick frozen food was the main topic of discussion at the recent meeting of the American Institute of Meat Packers.

A distinguishing feature of the Birdseye process, as compared with other methods of quick freezing, is that the fish, meat or vegetables are packaged before being put through the freezing machine. While some difficulties were encountered in the selection of the most suitable materials for the container, there are many advantages to packaging the food before it is frozen. There is considerable saving in the space required, the contents of the package are uniform in weight, and the problem of removing the product from the freezing equipment is eliminated.

The Birdseye equipment consists essentially of two endless metal belts between which the packaged food is fed through the machine. Brine of a very low temperature is sprayed upon the metal belts from the top and bottom, quickly absorbing the heat. The package is under some pressure between the belts, providing direct contact throughout and permitting heat transfer entirely by conduction. It is highly important that very low temperatures be used in order to effect the freezing in minimum time.

The materials used in the package are also important. Waterproof cellophane has been found to be very efficient as the wrapping immediately in contact with the food. Strength and rigidity is given to the outer package by the use of a hard-pressed fibre cardboard. The material selected offers a minimum of

(Concluded on Page 2, Column 3)

Holmes Products, Inc., Liquidated

Reports that Holmes Products, Inc., Bridgeport, Conn., manufacturers of domestic refrigerators, had sold all of its machines and equipment to the Standard Steel Co., 13-17 Kimberley Ave., West Haven, Conn., were confirmed by the latter company, Tuesday, Jan. 14, in a telegraphic dispatch, replying to a wire sent by ELECTRIC REFRIGERATION NEWS, Monday.

The wire from the NEWS and the reply from Standard Steel follow:

Standard Steel Company,
West Haven, Conn.

Please confirm report that your company has purchased all machines and equipment of Holmes Products. Are you planning to liquidate this stock or will you continue to manufacture Holmes refrigerators?

ELECTRIC REFRIGERATION NEWS.

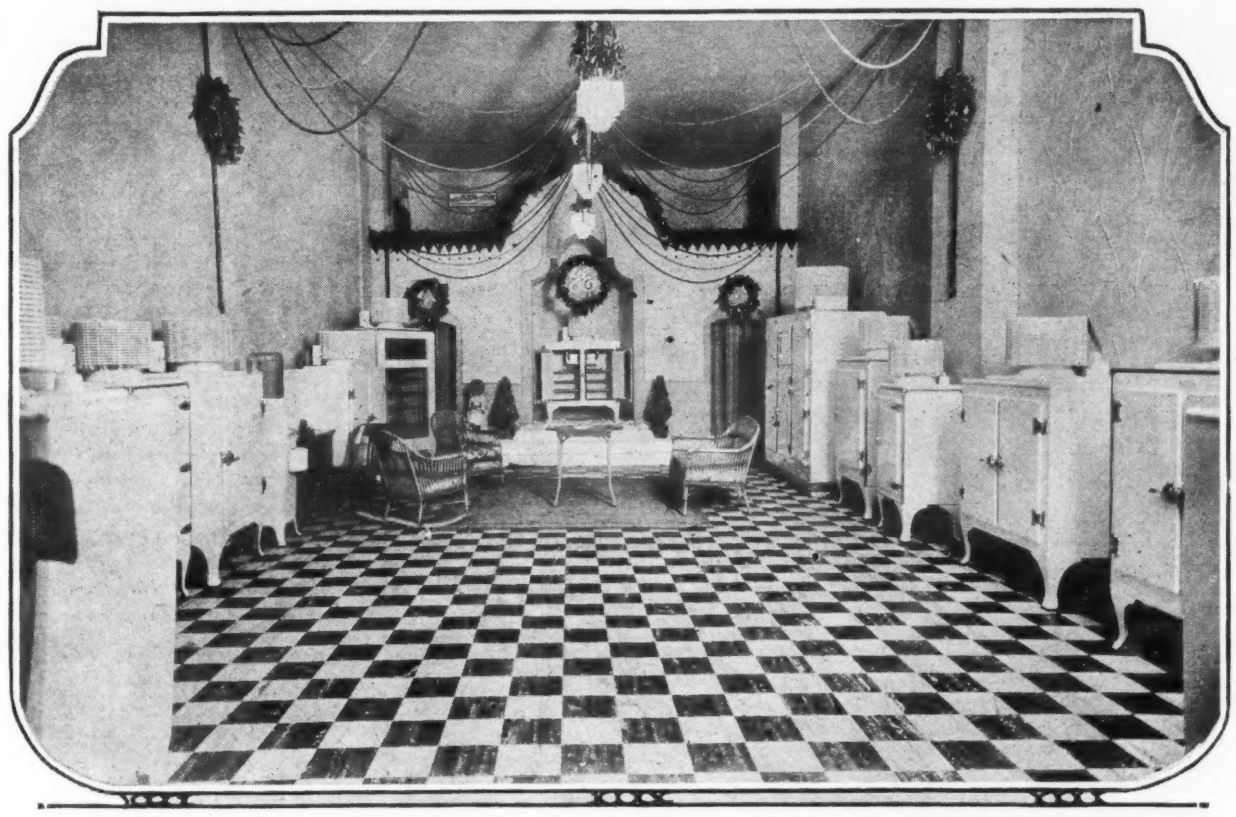
Electric Refrigeration News,
Detroit, Mich.

Holmes Products entirely liquidated except for service. We do not intend to manufacture.

THE STANDARD STEEL CO.

It is understood that the liquidation takes place without financial loss to any creditors of the Holmes Co.

G. E. Domestic Model Shines in "Jewel Setting"



General Electric Refrigerators effectively displayed by Louisiana dealer.

COPELAND EXECUTIVES REFLECT OPTIMISM

Detroit, Mich.—Optimism for the future was reflected in all of the speeches by executives at the fifth annual convention of the distributor and dealer organization of the Copeland Sales Company, held January 13-14, at the Players' Club in Detroit. W. D. McElhinny, was in charge of the convention and conducted the events in true McElhinny style, slam bang, go, right from the start to the finish.

Driving home the slogan of "Work Harder in 1930," Mr. McElhinny gave the organization an insight into what the company had planned for the year, and predicted the biggest and best year in the history of the Copeland Company.

W. R. Wilson, chairman of the board, characterized the recent stock market crash as a "successful calamity," pointing out that it had put business more solidly on its feet than before, bringing stock values nearer to true values and terminating a dangerous period of over-inflation. "Business is sound and on a firm footing, and there need be no fear for the future of the electric refrigeration industry, or any other for that matter, if properly managed."

Louis Ruthenburg, president of the company, met the dealer organization as a whole for the first time in a "get acquainted speech," in which he predicted that 1930 would be Copeland's greatest year, and called on all present to back up the 1930 slogan.

Others who addressed the session were C. W. Hadden, of the executive staff, who was general manager of the sessions; Edwin H. Brown, vice-president, secretary and treasurer; Carleton Smith, comptroller; Edward Hughes, factory manager; Edward Barger, in charge of engineering; H. Brysselbout and D. B. Henry, commercial engineering; F. N. Pattison, manager of the dealer development department; Harry Newcomb, service manager, and W. S. Race, manager of advertising and sales promotion.

The dealers inspected the company's new factory at Mt. Clemens on the afternoon of January 14. The convention concluded with a banquet at the Hotel Statler on Tuesday evening.

Prizes for record sales for 1929 were presented at the closing banquet of the convention. These were loving cups and marked the termination of the year's contest among the company's distributors and dealers of the country. They were presented to: The Copeland Refrigeration Company, of New York; Harper Magee & Co., of Seattle; Bender Electric Company, of Trenton, N. J.; B. L. Johnson, Inc., of Bethlehem, Pa.; Wilkie, of Pittsfield, Mass.; Good Housekeeping Shop, of Kingston, Pa., and C. J. Benedict, of Warwick, N. Y.

Among the speakers at the banquet were: Louis Ruthenburg, president; H. M. Robins, of the H. M. Robins Co., Copeland export agents; F. M. Cockrell, of ELECTRIC REFRIGERATION NEWS; W. A. P. John, of the Campbell-Ewald Co.; W. R. McElhinny, vice-president in charge of sales, and C. W. Hadden, of the executive staff, who presided.

Attending the convention from Japan was T. Tanaka, who manages the Tokyo branch of the Copeland Japanese distributor.

CANADIAN CO. CHANGES NAME TO FRIG-O-MATIC

Brantford, Ont., Canada.—Dominion Blower Co., Ltd., which has just completed the most successful year in its history, announces a change of corporate name to Frig-O-Matic, Ltd.

A. E. Spowage, president of Frig-O-Matic, Ltd., says that this direct linking of the registered trademark of the electric refrigeration product with the name of the manufacturing company, should prove as successful as the change made in connection with Coal-O-Matic, Ltd., which was organized as the selling company for Coal-O-Matic products, manufactured by Dominion Blower.

Mr. Spowage also stated that, under the new name, the capital has been doubled by transferring to capital account the reserves which have been accumulated from the net earnings of the company.

REFRIGERATOR COMPELS CUSTOMER'S ATTENTION

Shreveport, La.—An effective arrangement of General Electric refrigerators has been bringing customers into the store of A. G. Riddick, Inc., of 422 Market Street. The entire arrangement, which is shown in the photograph on this page, is designed to compel the eye of the person entering the store to look first of all at the G. E. refrigerator placed on a low platform at the back of the store and flooded by lights.

This "come hither" setup was planned by J. C. Griffith, local manager for the Riddick organization. Mr. Griffith calls it his "jewel setting," a title which is justified by the variously colored lights thrown upon the unit. Other G. E. refrigerators form an aisle with the display unit occupying the place of honor at the end.

A. G. Riddick, Inc., is the latest addition to the electric refrigeration field in Shreveport. This company is headed by A. G. Riddick, of Jackson, Miss., president and general manager. This company was awarded a prize by General Electric in 1928 for exceeding its sales quota in western Mississippi. Mr. Griffith, the local manager, is a graduate of Georgia Tech, and has been associated with General Electric at the Schenectady factory, Cleveland, Ohio, and as wholesale manager for A. G. Riddick, Inc., at Jackson, Miss.

WELSBACH TO MARKET NEW DOMESTIC MODEL

Gloucester City, N. J.—A new domestic refrigeration unit is to be placed on the market by the Welsbach Company. The announcement of the new unit is made by R. R. Thompson, sales manager, who states that further details in regard to the design and size of the new product will be ready about February 1.

Notices have been sent to all Welsbach dealers, advising them of the fact that the new domestic unit will soon be on the market.

FRIGIDAIRE PLANNING REGIONAL MEETINGS IN THIRTEEN CITIES

Sound Pictures to Have Big Part in Sessions

Dayton, Ohio—Sound pictures will have an important part in the 13 regional conventions to be held this year by Frigidaire Corporation to acquaint its 10,000 dealers and salesmen with plans, products and policies for 1930. Many novel ideas, based upon the use of such pictures, will have their first showing to field representatives of the Dayton organization at these conventions.

A convention crew of 20 members, headed by J. A. Harlan, sales manager, will open a series of 13 conventions on January 21, in Atlanta, Ga. The convention party will return to Dayton near the end of February upon the completion of a 10,000-mile swing from coast to coast, during which meetings will be held in Atlanta, Roanoke, Philadelphia, New York, Boston, Buffalo, Detroit, Chicago, Memphis, Dallas, Kansas City and San Francisco.

The 1930 convention will be taken to the field under the name of the A. B. C. convention. Fundamentals will be stressed. Each number on the program will deal with a basic idea, illustrated, exemplified and projected with such clarity and force as to drive home within the space of a few hours all the important points the field organization is expected to carry through during the coming twelve months. Hundreds of salesmen who made their quotas during 1929 will be rewarded with purses of gold. Outstanding district sales managers will receive personal recognition.

Soon after the return of this convention troupe, there will be a national meeting of honor salesmen in Dayton, bringing approximately 300 men from all parts of the United States and Canada for a one-day celebration. Only salesmen who sold 125 per cent of their quota in 1929 will be in attendance. This will be the first national Frigidaire sales meeting to be held in this city since 1927.

Mrs. Elizabeth Stone Macdonald, head of the Frigidaire department of home economics, will have a prominent place on each regional convention program, and will present features and ideas with respect to Frigidaire products that have a particular appeal to women.

Mrs. Macdonald has a national reputation as a writer and speaker on home economics. She was for five years head of the department of home economics of Boston University. She founded the "Priscilla Proving Plant," a laboratory maintained by the magazine, "Modern Priscilla," to test recipes, try out kitchen equipment and do other research work for the benefit of housekeepers.

As in previous years, the Frigidaire regional convention party will carry its own special baggage car loaded with scenery, stage equipment and other properties. It will carry with it, in addition, its own stage crew, orchestra director and entertainment troupe. The convention program will be presented with all the precision and minute details that characterize a Broadway show.

(Concluded on Page 2, Column 4)

NEW CORPORATE NAME FOR ELECTROLUX SALES

Evansville, Ind.—The corporate name of the distributing organization for Electrolux refrigerators has been changed to Electrolux Refrigerator Sales, Inc. General offices will be maintained here.

Electrolux, previous to January 1, 1930, functioned under the corporate name of Servel Sales, Inc. This name will be continued by the organization distributing Servel motor-drive compression type refrigerators.

FRIGIDAIRE PRODUCTION AT 1,300,000 MARK

Dayton, Ohio—A pronounced upswing in January orders and a highly optimistic first quarter distributor and branch forecast are reported by the Frigidaire Corporation, according to announcement made January 13.

Sales for 1929 totaled more than 25 per cent over those for 1928, according to E. G. Biechler, president, who announced that there are now more than 1,300,000 users of Frigidaire.

Springfield Kelvinator Has Best Sales Month of Year During December

Springfield, Mass. — Springfield Kelvinator Sales, Inc., reports the installation of a Kelvinator water cooler in the United States Veterans' Hospital at Northampton, and an E-8 Esco Milk Cooler in the laboratory of the Massachusetts Agricultural College in Amherst, Mass. This company reports the best sales in December of any month since the store was opened early last spring.

Off to the greatest year in Copeland History

The Copeland set-up, as it exists today, offers a far more logical proposition — bids fair to yield far more satisfactory returns — than ever before in Copeland history. ¶ First of all, Copeland products for 1930 make the most powerful appeal, on both a price and a quality basis, that they have ever made. Second, the Copeland line is exceptionally complete, embracing not only self-contained household models, but separate units for present ice-boxes, multiple installations for apartments, Copeland water coolers, and units for commercial purposes. And finally, Copeland's house is in first-class order — the new Copeland factory affords production facilities which are not only modern but extensive enough to supply the public's increasing demand! ¶ Merchants interested in participating in Copeland's program of expansion are invited to correspond with us.

COPELAND SALES COMPANY
332 CASS AVENUE :-: MOUNT CLEMENS, MICH.

Copeland
DEPENDABLE ELECTRIC REFRIGERATION

BIG ECONOMIES IN QUICK FROZEN FOOD

(Continued from Page 1 Column 2)

resistance to the outward transfer of the heat.

Mr. Birdseye touched on the great economies which will be possible as a result of using the quick freezing process at the point where various foods may be produced most advantageously and the distribution of packaged and branded food products of uniform quality at all seasons of the year. He foresees the time when foods produced in the United States will be distributed to all parts of the world, and when foods which are now unknown in American markets will be shipped from many foreign countries, thus adding tremendously to the variety which the American public may enjoy.

Following Mr. Birdseye's address, Chairman George B. Bright called on F. C. Bloom, of Chicago, who is also well known as a leader in the development of the quick freezing process. Mr. Bloom addressed the Detroit engineers recently on this subject. (See December 18 issue of the NEWS.)

Representatives of Armour, Swift, Wilson and other meat packers, present at the meeting, took an active part in the general discussion, and expressed keen interest in the possibilities of the process. Several had come from Chicago and other cities especially to learn more about the new method.

During the discussion several references were made to the possible resistance of the housewife to the idea of frozen food because of her experience with the spoilage which normally results from slow freezing. The ladies present were called upon to express their opinions as to the probable attitude of the housewife. In general, it was agreed that organized educational effort might be required in order to remove this initial prejudice, but the ladies were outspoken in their approval of the economies and other advantages which would be gained when quick frozen food is made widely available.

Manufacturers of electric refrigeration equipment for food purveyors and for the home were enthusiastic about the great potential market which will obviously be created by the introduction and public acceptance of frozen food. They foresee the demand for cabinets of larger capacity, and that many homes will require a second refrigerator for food storage purposes.

An interesting feature of the meeting was the display of a new type of cabinet for food stores made by the American Thermos Bottle Company. It consisted of a metal cabinet containing two 15-gallon thermos jars for the storage of packaged goods. The jars are refrigerated by coils entering from the top. On top of the cabinet is an inverted bell type thermos jar, under which is placed samples of the packaged foods. Refrigeration is maintained by a small coil inside the jar. Built into the unit is a small refrigerating machine made by the Whitehead Company of Detroit.

An ice display by the Pittman & Dean Company of Detroit also attracted much interest. It consisted of several large blocks of ice in which fish and vegetables were frozen: also ice blocks molded in the form of various life-sized animals.

Other men who talked during the dinner meeting were: Clarence Vogt, Instant Freezers, Louisville, Kentucky. A. McKenzie, Wilson & Co., Chicago, Ill. H. J. Koenig, Institute of American Meat Packers, Chicago, Ill. Henry D. Tefft, Institute of American Meat Packers, Chicago, Ill. A. C. Thompson, Swift & Co., Chicago, Ill. J. E. Decker, Jr., Jacob E. Decker & Sons Co., Mason City, Iowa. Leslie C. Smith, secretary, National Association of Ice Industries, Chicago, Ill. Arnold H. Goelz, Brunswick-Kroeschell Co., Chicago, Ill. L. S. Kielholtz, Frigidaire Corp., Dayton, Ohio. R. E. King, General Electric Co., Ft. Wayne, Ind. J. D. Parker, Parker-Webb Co., Detroit, Mich. A. J. Hecker, St. Louis Refrigeration Co., St. Louis, Mo. Harry Hall, Grand Trunk Terminal & Cold Storage Warehouse, Detroit, Mich. Bert White, Great Lakes Terminal Warehouse, Detroit, Mich. F. M. Cockrell, ELECTRIC REFRIGERATION NEWS Detroit, Mich. C. O. Duevel, Jr., American Thermos Bottle Co., Norwich, Conn.

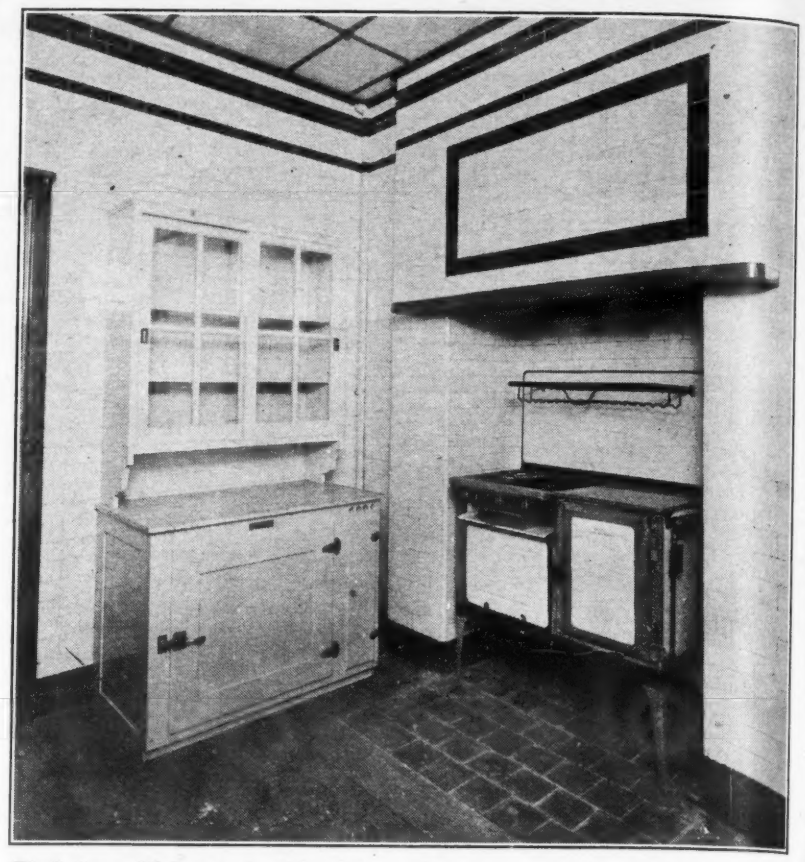
Detroit ladies who took an active part in the discussion included: Mrs. F. B. Riley, Mrs. R. C. Doremus, Mrs. Emmet J. Mueller, Mrs. R. M. Hyde, Mrs. H. Brysselbout, Mrs. Theodore Huetteman, Mrs. Al. Wallach and Mrs. Glenn Muffly.

A number of people were present from the following cities: Cleveland, Ohio; Toledo, Ohio; Dayton, Ohio; Evansville, Ind; Cincinnati, Ohio.

QUINN AND ZIMMERMAN ON PACIFIC COAST

T. K. Quinn, general manager, and P. B. Zimmerman, sales manager, of the Electric Refrigeration Department of the General Electric Co., Cleveland, Ohio, are visiting dealers and distributors along the Pacific Coast. They are stopping at a number of cities in their jaunt through the Western States.

A Space Saving Arrangement



Find the refrigerator in this picture. See how space is saved in an English apartment kitchen by combining cabinet, work table and Electrolux refrigerator.

Next Issue

The January 29 issue of Electric Refrigeration News will feature the latest developments in the water cooling field. Manufacturers of equipment designed for any water cooling application are invited to send complete information about their products to the Editorial Department before January 25.

FRIGIDAIRE MEETINGS

(Continued from Page 1 Column 5)

Heavier acts will be interspersed with playlets, pantomime, motion pictures, stirring music and other lighter features on the program, so that representatives in attendance will not have a dull moment during the five hours the conventions are actually in session.

Rehearsals of the various acts have already started. There will be a dress rehearsal for the benefit of factory employees at a downtown theatre shortly before the convention party leaves on its 1930 trip. The program will be exactly the same in each city, with morning and afternoon sessions devoted to business, a lunch at noon, and a banquet with entertainment in the evening.

Speakers on the program include: R. F. Callaway, manager of branches; E. D. Doty, advertising manager; H. F. Lehman, service manager; R. L. Lee, sales promotion manager; G. A. Ames, of the General Motors Acceptance Corp., and J. J. Pocock, Frigidaire distributor for the Philadelphia district.

There will be no business sessions at the convention of honor salesmen, to be held in Dayton later in the year, as the "Trip to Dayton" meeting is in the nature of a reward for hard work. The salesmen winning the trip will be taken for a trip through the factories, followed by a banquet and entertainment in the evening. A number of General Motors officials will be invited to be present.

Frigidaire salesmen in the Dayton district, numbering approximately 150, will attend the regional convention in Detroit, February 4. H. W. Pryor, local distributor, has engaged a private train to carry his entire sales organization to this meeting, which will be held in the Cass Theatre, followed by a dinner at the Statler Hotel.

BATTLESHIP MEMPHIS HAS FRIGIDAIRE EQUIPMENT

Baltimore, Md.—The battleship Memphis, famed for bringing Col. Charles A. Lindbergh and his airplane, The Spirit of St. Louis, from France, after his epochal flight from New York to Paris, has been equipped, while in the harbor here, with new refrigeration. Compressors and coils were furnished by the Baltimore branch of Frigidaire Corporation. This equipment included refrigeration for the new soda fountain which was installed.

SALES CONTEST WINNERS GET CHRYSLER SEDANS

Evansville, Ind.—Kings Appliance Co., Brooklyn, N. Y., and Birmingham Gas Co., Birmingham, Ala., finished at the head of their respective divisions in the three months' Electrolux sales campaign which closed recently, and the sales managers of the companies, S. L. Lind, Brooklyn, and George H. Schlatter, Birmingham, each received a Chrysler Crown four-door sedan.

Quotas, based on past performances, population and other factors, were set at the beginning of the contest, and both winners passed the 100 per cent mark. The record of the Birmingham company is outstanding, because of the fact that on May 15, 1929, there were only two Electrolux units operating in Birmingham; now nearly 600 have been installed.

Results of the contest were so successful that special prizes of $150 in gold were awarded to second-place winners: C. H. Potter, Southern Counties Gas Co., Los Angeles, Calif, and E. J. Boyer, Minneapolis Gas Light Co., Minneapolis. Other companies entered in the contest included Washington Gas Light Co., Washington, D. C.; Detroit City Gas Co., Detroit, Mich.; Milwaukee Gas Light Co., Milwaukee, Wis., and Portland Gas and Coke Co., Portland, Ore.

WELSBACH MACHINE IN OPERATION 29,000 HOURS

Gloucester City, N. J.—On September 11, 1926, a model No. 20 Welsbach low pressure electric refrigerator, which is now running, was started on an endurance test in the Welsbach Research Laboratory in this city.

Francis A. Wegener, chief engineer, says: "This machine has been running for a period of approximately 29,000 hours without interruption, except that every six months the compressor is torn down and measured for wear. Although the machine has been continuously operating and refrigerating, and without breakdown or service for a period equivalent to over thirteen years of actual service in the customer's home, we found, on our last examination—as on all those previous—that there was no detectable wear on any of the parts of the compressor."

NEW COMMERCIAL SHOWROOM OPENED BY GLUECK CO.

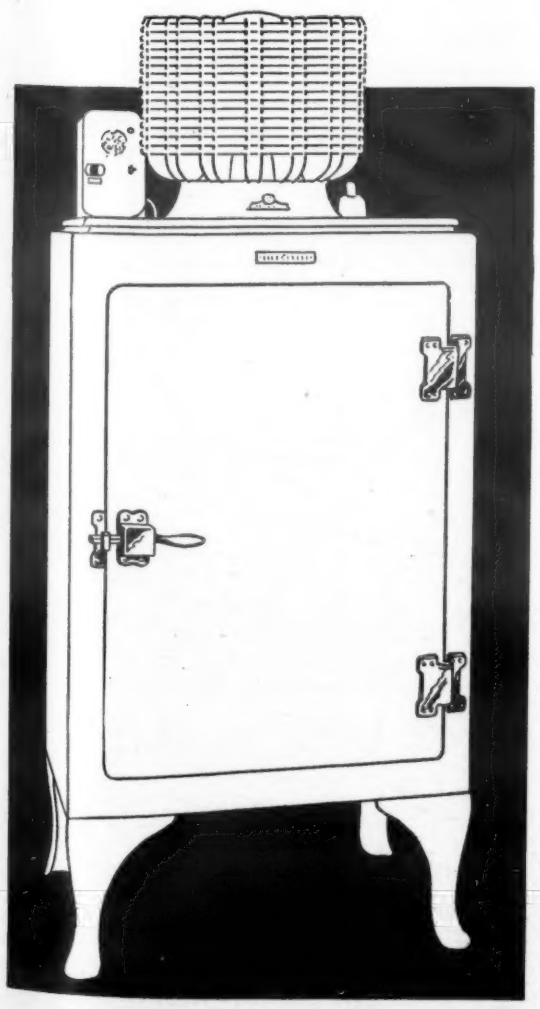
Kansas City, Mo.—Glueck and Co., distributors for General Electric refrigerators, recently opened a new commercial showroom here. Coincident with the opening came the appointment of Orville Beach to the position of commercial manager.

HALE AND EBRIGHT ARE PROMOTED

Cleveland, Ohio—B. N. Hale has been made acting head of the Ceramic Service Staff of the Ferro Enamel Supply Co. H. E. Ebright, G. E., becomes technical director.

15 WORDS THAT TELL YOU MORE ABOUT A REFRIGERATOR THAN 1000 *claims*

OF THE HUNDREDS OF THOUSANDS OF OWNERS *not* 1 HAS PAID A CENT FOR SERVICE



THAT is the amazing record of the General Electric Refrigerator's efficiency, dependability and economy. It is a record that is selling General Electric Refrigerators faster than they have ever sold before. It is a record that *you* will find more convincing, more productive of sales than *any* number of mere claims. It is a record which is the basis for the unprecedented preference for General Electric Refrigerators. Salesmen and dealers are using it to make quicker, easier sales every day. Use this record—use it for all it is worth!

GENERAL ELECTRIC
ALL-STEEL REFRIGERATOR

ELECTRIC REFRIGERATION DEPARTMENT OF GENERAL ELECTRIC COMPANY, HANNA BUILDING, CLEVELAND, OHIO

WESTINGHOUSE IDEA RECEIVES PRAISE AS CLEVER PSYCHOLOGY

THAT the Westinghouse Company has adopted an idea distinctly original in character and a clever contrast to the store display methods now in vogue, was pointed out in the preceding issue of the NEWS (Jan. 1, 1930). In announcing the new Westinghouse electric refrigerator, which will appear on the market February 1, the NEWS selected the typical setting for store displays as the most striking feature of the Westinghouse idea, and used it as the front page illustration of the NEWS story.

In the current issue of *Printers' Ink* (January 9), comment is made on the Westinghouse plan in the columns of this journal for advertising men which appear regularly under the title of "The Little Schoolmaster's Classroom." How the "schoolmaster" was impressed by the applied psychology of the plan is related as follows:

"The Schoolmaster has before him a statement prepared by the Westinghouse Company for distribution to the trade in connection with the electrical refrigerator which it plans to introduce shortly. This statement is concerned with retail display rooms. It begins by declaring that present-day retail display rooms in which electric refrigerators are shown are too formal. There has been too much elegance, correctness, formality, 'the exact opposite of the atmosphere of the customer's home.'

"Westinghouse believes 'this to be an incorrect method of lessening sales resistance.' It concentrated on the problem of making the customer feel at home in the dealer's display room without sacrificing beauty and harmony of appointments. As a result, it developed a standardized display room. This display room 'has a tangible, homey atmosphere.' The atmosphere of this setting 'is a mixture of the best points of the American Colonial and French Provincial periods. Beauty and simplicity are subtly combined to give an atmosphere of comfort and relaxation. Whether the customers are rich or only in moderate circumstances, they will feel at home in the Westinghouse refrigerator display room. The instinctive antagonism of discomfort, either mental or physical, will thus have been obviated at the outset.'

"The standardized setting includes a maple butterfly table and, surrounding the table, are three chairs. 'One is a low, wide, upholstered wing arm chair, where the lady, of course, will be seated. Almost invariably she will sink into it with a little sigh of comfort.' It is also important to note that the 'wallpaper is of Colonial design, and through its subtle inconspicuousness, provides a background for the entire picture.'

"But this is not all. Not only is the display room designed to place Mrs. Customer in a buying frame of mind, but 'Mr. Customer, too, will like the display room and will sink comfortably into his arm chair, which will be placed conveniently near the table. There will be no mechanical difficulties placed in the way of signing on the dotted line.'

"Perhaps because his selling experiences hark back to those days when psychology was considered strictly a classroom subject, the Schoolmaster has never been visibly swayed by the new-day school of psychological selling. When he sees such an industrial giant, however, as the Westinghouse Company—an organization with which one associates such things as immense turbines and the like—pave the way for its new electrical refrigerator with applied psychology of the subtlest sort, he confesses to an inclination to weaken."

GENERAL MANAGER

Detroit, Mich.—Hiram M. Browne, formerly vice-president and general manager of Gladiator Mfg. Co., manufacturers of automobile parts and accessories, has recently been appointed general manager of Absopure Refrigeration Corp., 1560 Theodore St.

Mr. Browne's business experience is extensive. He has held executive positions with the following companies during the past twenty-five years; Pope Hartford Co., Easton Mfg. Co., Lexington Howard & Indiana Lamp Co., Stenotype Company, American Motors Corp., Zenite Metal Co., and Duckwall Interests. During the World War, he spent eleven months in the Signal Corps and Ordnance Department, gathering details concerning airplane manufacture, and serving as works manager of the Stenotype Company.

Hiram M. Browne

Farms in California Valleys Good Market for Refrigeration

By Ben D. Moses and James R. Tavernetti
University of California
Agricultural Experiment Station
Davis, Calif.

DURING the month of September, 1929, a survey of general utility cold storage boxes for farms was conducted in the Sacramento Valley as far north as Chico, and in the San Joaquin Valley as far south as Bakersfield.

By a "general utility cold storage box" is meant something larger than the ordinary household box, either walk-in or non-walk-in, in which general farm produce is stored for household use or other purposes.

The purpose of the survey was to determine, if possible, the extent of the present use of such a box, demand for such a box, how they are used, foods stored, and general characteristics as to construction and operation.

During the survey twenty (20) different farms were visited that had utility boxes. Of these, nine (9) were large farms, where a cook was hired and an average of ten (10) or more persons fed throughout the year. The other eleven (11) were on places where only the family and perhaps a few hired men were fed. The types of farms varied, with fruit and vineyards on the largest number and the rest divided between cattle, grain, and other crops.

Fifteen (15) of the boxes were of the walk-in type and five (5) were the non-walk-in type.

Of the walk-in boxes, twelve (12) were built on the farm, while the other three (3) and all of the non-walk-in boxes were factory built.

The general construction of the walk-in box consisted of a small room with shelves along the walls on two or three of the sides and usually only one large door. In some cases there was also a small door for placing food on the shelves. The general construction of the non-walk-in boxes consisted of a cabinet about two feet deep, five feet high, and six feet long. The box was provided with a large door opening into a compartment for hanging meat or storing large containers, and several small doors, usually four opening into the coil and shelf compartments.

The insulation used in five of the factory made boxes was three inches of sheet cork, two had four inches of sheet cork, and one had three inches of mineral wool. Of the locally built boxes, one had three inches of sheet cork for insulation, two had four inches of sheet cork, five had four inches of ground cork, and five had ten to twelve inches of sawdust or shavings.

There were nine of the smaller size walk-in boxes which varied in capacity from 84 to 160 cubic feet, with an average of 124 cubic feet, and five of the larger size, which varied in size from 252 to 576 cubic feet, with an average of 380 cubic feet. The non-walk-in type boxes varied in size from 60 to 87 cubic feet, with an average of 69 cubic feet.

The cost of the complete plants for the smaller type of walk-in boxes varied from $500 to $900, with an average of $672. The large type of walk-in plants varied in cost from $800 to $2,075, with an average of about $1,300. The non-walk-in plants varied in cost from $800 to $1,185, with an average of $940.

The cost of the non-walk-in plants was comparatively high because they were all factory made boxes, insulated with sheet cork, and on the average much better constructed than the walk-in types.

All of the boxes but one were cooled by direct contact with the evaporating coil. In one box, the ice machine cooled a tank of brine, which, in turn, cooled the box. The size of ice machine for the walk-in type boxes varied between 200 to 1,000, with an average of 475 pounds ice melting capacity per 24 hours. The size for the non-walk-in boxes varied from 300 to 500, with an average of 440 pounds ice melting capacity per 24 hours. Approximately half of the ice machines were water-cooled and the other half air-cooled. Two were operated from farm lighting plants.

The box was usually located in the basement, on the back porch, or in some building close to the house. It was used in practically all cases for storing the general household foods, as well as other products, such as large quantities of fresh meat, ham, fruit and vegetables. Several of the farms killed their own meat, some bought meat wholesale in large quantities, and others did both. The greatest portion of meat killed on the farm was pork, mutton and veal. Very few large beeves were killed, and these only on the cattle ranches.

Six of the plants made ice and five of these made it only in trays located in the evaporator coil such as in household units. One of the plants, which was on an extra large farm, had a special brine tank located outside of the storage box and used exclusively for freezing 50 to 100 pounds of ice per day. Nearly all of the farmers tried to keep their boxes at a temperature from 36 to 40 degrees Fahrenheit. In one case two temperatures, 32 degrees in the meat compartment and 40 degrees Fahrenheit in the other compartment, were obtained by placing a galvanized iron baffle between the coil and the 40 degree Fahrenheit compartment.

Only five of the plants have needed any repairs, and these were practically all of a minor nature, consisting of adjustments or small replacements.

Practically all the farmers were well satisfied with their plants. The only complaints made were that the box was too small in one case, and the ice machine ran most of the time in the other case. Some of the farmers stated that they kept meat as long as six weeks or two months, and it would still be in good condition. In one case a farmer stored fruit in his storage box during the harvesting season and had a supply of fresh fruit all year.

On two of the farms the large box was located in the basement and a small box in the kitchen, both operating from the same compressor.

Conclusions

1. The use of a general utility cold storage box on the farm at the present time is not very widespread, being limited mainly to large ranches.
2. Those that have a general utility cold storage box have obtained it by request rather than by having it sold to them.
3. This general utility box has a very diversified use on the farm and seems to be very satisfactory.
4. Two things have limited its use, the first cost, and the fact that its sale has not been pushed by the refrigerating agencies.
5. There seems to be a demand for three types of boxes. One a non-walk-in box of from 50 to 60 cubic feet capacity, for use on the average farm, where it is not desired to store any large quantities of food, but there is a need for something larger than the ordinary household unit.
   Another type is a medium size walk-in type box, of approximately 100 to 150 cubic feet capacity, for use on ranches where fairly large quantities of food are stored. The other type is a large walk-in box for special uses or for extra large ranches.
6. It would be advisable to have separate compartments in which to store different kinds of food to prevent the odors of one from contaminating the others.
7. It costs less for the farmer to build his own box than to buy a ready made box.
8. It is essential to have a refrigerator unit of sufficient capacity to keep the box at the desired temperature at all times without excessive operating time.
9. The plant should be designed for the zone in which it is to be used.
10. There is a need for the circulation of information on the advantages of the general utility cold storage box among the farmers, if it is to be used to any extent. Farm organizations, power company employees, and farm journals are available means for extending this information.

SUNBEAM COMPANY STARTS ASSEMBLY OPERATIONS

Evansville, Ind.—Assembly operations have been begun by the Sunbeam Electric Manufacturing Co. on the Roto-Rite unit, patent rights for which were recently bought from the Indian Motorcycle Company, John A. Wieber, secretary, announced on Jan. 11. Operations at present are largely in the experimental stage, he stated.

HEIBEL LEAVES GENERAL ELECTRIC CO.

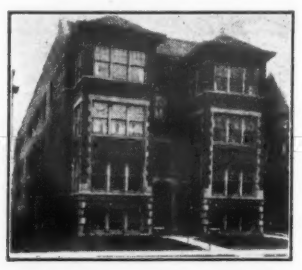
Cleveland, Ohio—W. E. Heibel, formerly in charge of the news bureau of the Electric Refrigeration Department of General Electric Co., has been appointed advertising manager of P. A. Geier Co., manufacturer of Royal electric vacuum cleaners.

KELVINATOR STOCKHOLDERS MEETING JANUARY 20

The annual meeting of the stockholders of Kelvinator Corporation will be held at the plant, 14250 Plymouth Road, Monday, January 20, 1930, at 11:00 a. m.

Number Four of a series

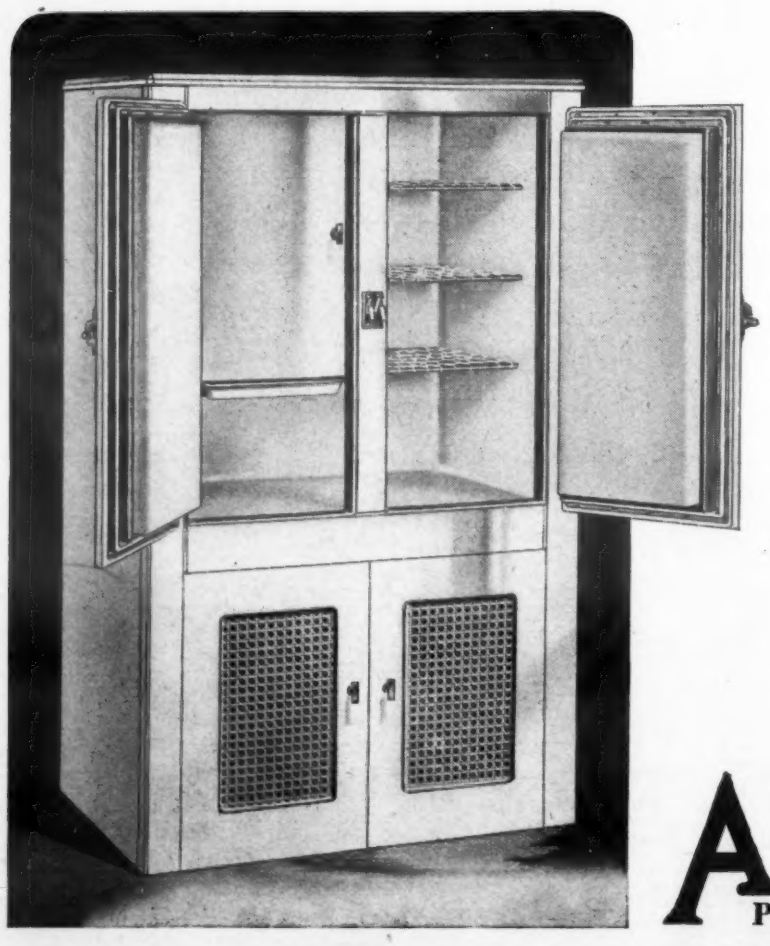
25 Alaskas, Norge units, 1456 Lagoon Avenue, Minneapolis, Minn.



26 Alaskas with Peerless Ice Machine, Glenn Manor Apartments, 645 Merrick Ave., Detroit

60 Alaskas, Norge units, The Ann Apartments, 50th and Northwestern Ave., Milwaukee, Wisconsin

161 Alaska electric cabinets cut refrigerating costs in these exclusive apartments



No. 740

This cabinet has the famous Alaska perfected insulation. Porcelain Exterior—Seamless Porcelain Lined. All Doors Have Porcelain Pan Linings and Double Air-Tight Gaskets, Two-Inch Insulation in Walls, Top and Doors. Three-Inch Insulation Bottom.

New perfected insulation in Alaskas is a great money saver. Leading apartment owners and operators insist upon the Alaska Cabinet which actually reduces refrigerating costs by *holding low temperatures.*

Of course, the trim, dignified lines of Alaska Cabinets, their commodious and accessible interiors win instant and permanent tenant approval as well.

Only 52 years of constant research and experiment to keep improving Alaska economy and efficiency could give Alaska the leadership it enjoys today.

The Alaska Refrigerator Corporation
Muskegon, Michigan

ALASKA
Perfected Insulation Cabinets

The Alaska Cabinet is suited to practically all types of electric refrigeration

COMMITTEE DECIDES ON INTERPRETATION OF PORTLAND CODE

SINCE the passage of the new Refrigeration Code by the city of Portland, Ore. (see page 34 of the January 1 issue of ELECTRIC REFRIGERATION NEWS), the Refrigeration Committee met to discuss methods of enforcement. The application of the Code to buildings under construction was determined. The following notice states the decision reached: .

Your attention is called to Ordinance No. 57621, passed by the Council November 27, 1929, and commonly known as the "Refrigeration Code." This ordinance regulates multiple refrigeration systems, except those using as a refrigerant ammonia or carbon dioxide. Copies of this ordinance are now being printed and will be available for general use in a few days. Full information relative to the regulations of this ordinance can be obtained by calling at the city hall, where copies of the ordinance are on file.

For the purpose of starting enforcement of this ordinance in a manner that would not work injustice or hardship on firms installing multiple refrigeration systems, and yet would give the public protection afforded by the ordinance at the earliest possible time, a meeting of the Refrigeration Committee was called on December 10, when there was a discussion of the proper manner in which to start enforcement of this ordinance. It was found desirable to call a second meeting on December 18 to clear up a few points not settled at the first meeting, and the following basis, after discussion by the Committee, was agreed to by representatives of the city as well as other members of the Refrigeration Committee.

In a new building construction of which was started prior to January 1, 1930, the refrigeration system need not comply with the refrigeration code if the contract for the refrigeration installation was entered prior to November 27, 1929.

In a new building started prior to January 1, 1930, where contract for the refrigeration installation was signed after November 27, 1929, the installation shall comply with the provisions of the refrigeration code.

In a new building started after January 1, 1930, the refrigeration system shall comply with the regulations of the refrigeration code, regardless of whether the contract for refrigeration installation was signed before or after November 27, 1929, when the refrigeration ordinance was passed, and a permit shall be taken out.

Multiple refrigeration systems installed before November 27, 1929, in existing buildings need not comply with the provisions of the refrigeration code.

Multiple refrigeration systems installed in existing buildings, installation of which was started after November 27, 1929, but prior to January 1, 1930, need not comply with the requirements of the refrigeration code, if the contract for such installation was entered into before December 21, 1929.

Refrigeration Code Notice

Multiple refrigeration systems in existing buildings, the installation of which is started after November 27 and prior to January 1, and the contract for which was signed on or after December 21, 1929, shall comply with the provisions of the refrigeration code, but no permit need to be taken out.

Multiple refrigeration systems in existing buildings, the installation of which is started after January 1, 1930, shall comply with the regulations of the refrigeration code, and permits shall be taken out for such installations.

It is rather difficult to cover all the cases that may arise, but it is hoped that the foregoing will satisfactorily cover all.

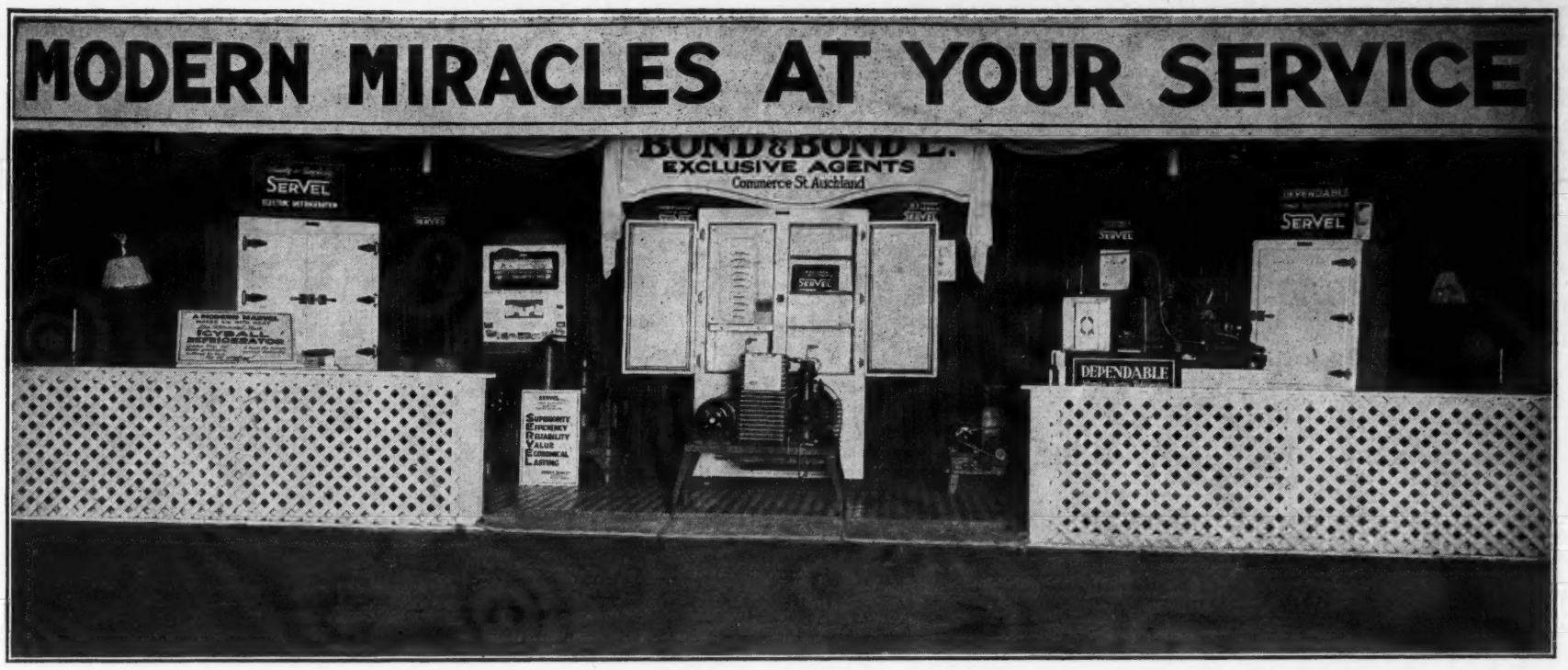
The co-operation of firms engaged in installing multiple refrigeration systems is requested, to the end that the enforcement of this ordinance can be started and carried on in a smooth and efficient manner.

You will be interested to know that Charles E. Gibson, Chairman of the Refrigeration Committee, announces that regular meetings of the Committee will be called, beginning shortly after the first of the year, the purpose of the Committee being to extend the regulations to cover ammonia and carbon dioxide systems, and to perfect regulations applying to multiple systems covered by the present code.

In case of any uncertainty relative to this notice, or as to the procedure to be followed in installing multiple refrigeration systems or taking out permits for the same, please take the matter up with the Bureau of Buildings, City Hall.

It is to be understood that permits for refrigeration systems will be issued beginning January 1, 1930, it being impossible to arrange for necessary permit books and forms at an earlier date.

H. E. PLUMMER,
Inspector of Buildings,
Secretary, Refrigeration Committee.



Electric refrigeration dealers in New Zealand use fairs and exhibits perhaps even more than those in the United States. This picture is Servel display of Bond and Bond, Auckland, New Zealand, at the winter show which, curiously enough, is held in September, as their seasons are, of course, opposite to ours.

COOKIES AND BREAD MADE EASILY WITH REFRIGERATOR'S AID

By Mrs. Phyllis K. Dunning

DURING the summer nobody needs to be reminded that their electric refrigerator can do a lot to make life a gayer, pleasanter experience. But during this season, when it's heat and not cold that we are all after, we are apt to forget that the refrigerator can still contribute a goodly measure towards making housekeeping an easier proposition.

Take this matter of hot breads, for instance. Hot breads are popular the year round. If you are a demon for speed you probably bear very heavily on the baking powder type of hot bread, with nary a thought to the yeast varieties. This is a terrible mistake, for delicious as baking powder hot breads are, there is a charm about the yeast-leavened ones which it is folly to pass by. Many's the totally lost meal we have resurrected and pushed to a palatable conclusion by the inclusion of a plate of crisp, golden brown, beautiful smelling hot rolls, which we shaped and baked in a matter of minutes. The yeast-raised doughs is simply to keep a batch of dough in your electric refrigerator, where the little yeast bugs sleep but do not die, springing eagerly to life and to work as soon as they are removed from the chilly interior of the refrigerator to the cozy warmth of the kitchen.

Refrigerator Rolls

1 cup scalded milk
¼ cup sugar
1 teaspoon salt
2 yeast cakes
¼ cup lukewarm water
¼ cup melted butter
2 eggs
Bread flour, about 4 cups

Add sugar and salt to milk. When lukewarm, add yeast cake which has been dissolved in the lukewarm water. Add 2 cups of sifted flour. When doubled in bulk, add melted butter, the eggs well beaten and 2 cups of sifted flour. Cover and let rise again. When doubled in bulk, knead down again. The dough is now ready to be stored or made into rolls. If you are going to use some of the dough immediately, and wish to store the rest, cut off the desired amount of dough. Then place the remaining dough in a tightly covered, greased pail or other container, and store in the electric refrigerator until wanted. Remove from refrigerator about an hour before needed, shape into rolls, put in a warm place to rise, and bake from 12 to 15 minutes in a hot oven (425 degrees F.).

Made Any Cookies Lately?

We believe there would be more home-made cookies in the world if only it were possible to remember them more than a half hour before it would be so nice to serve them. The refrigerator cookies makes it unnecessary to remember them more than a half hour in advance. You can keep cookie dough just as you can the roll dough, and bake up the fragrant, crispy wafers as you need them. Here are a couple of cookie recipes which you can modify to suit yourself, for goodness knows we shall not feel badly at all if you want to add a bit of melted chocolate or substitute raisins for nuts.

Vanilla Refrigerator Cookies

3 cups sifted flour
2½ teaspoons baking powder.
½ teaspoon salt
¾ cup shortening
¾ cup sifted brown sugar
2 small eggs, well beaten
¾ cup nuts, raisins, dates or chopped candied fruits
2 teaspoons vanilla
1½ cups granulated sugar

Measure and sift together the flour, baking powder and salt. Sift again. Cream the shortening thoroughly, and add to it first the brown, then the granulated sugar, blending thoroughly. Add the eggs, nuts or fruits and vanilla. Add the flour gradually, working it in well. Shape into rolls about 1½ inches in diameter. Roll in waxed paper and put into electric refrigerator until wanted. Then slice thinly with a very sharp knife. Place in greased pans and bake in hot oven (425 degrees F.) for about ten minutes. This recipe makes about 4½ dozen cookies.

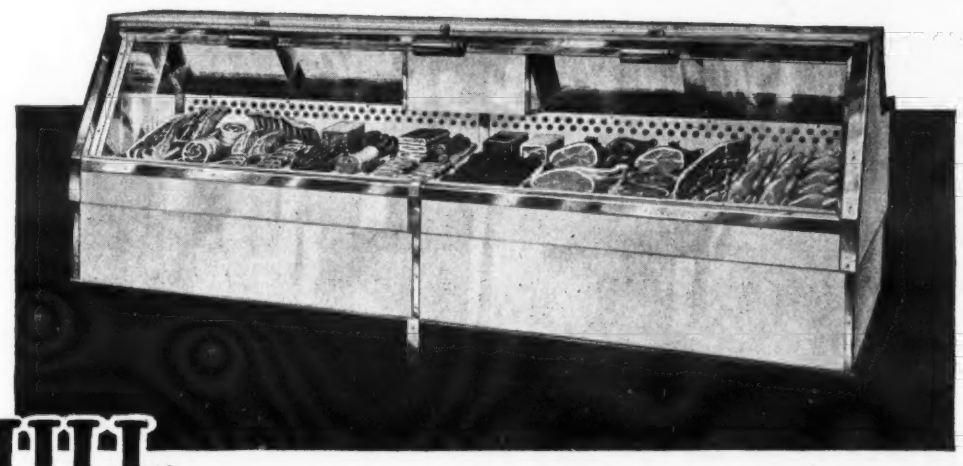
Spice Cookies

½ cup melted shortening
1 cup heated molasses
½ cup brown sugar
¼ teaspoon nutmeg
¾ teaspoon soda
¼ teaspoon salt
¾ teaspoon ginger
¾ teaspoon cloves
¾ teaspoon cinnamon
¼ teaspoon allspice
3¾ cups sifted pastry flour

Combine butter, molasses, sugar, salt, soda and spices. Add flour. Blend thoroughly and pack into covered container. Put into electric refrigerator and let stand for several days before using at all. Cut off desired quantities and roll to paper thinness. Cut with fancy cutters. Bake at 375 degrees F. for about six minutes.

Here's a case . . .

that proves attractiveness pays



The Hill Dry-Cold refrigerated display counter with Monel Metal trim. Manufactured by C. V. HILL & CO. INC. of Trenton, New Jersey.

The HILL Dry-Cold with Silvery Monel Metal Trim

DISPLAY case salesmen have discovered the sales value of good appearance. So have their customers! On every hand you see stores which have been "dressed up" by the installation of bright, new display cases.

Monel Metal is being used by C. V. Hill & Co. Inc. of Trenton, N. J. and other leading manufacturers because they have learned that Monel Metal—and only Monel Metal—offers all the advantages essential to a trim material.

The silvery beauty of Monel Metal is permanent—practically ageless. It will not rust. It resists corrosion and discoloring influences. Monel Metal has no coating to chip, crack or wear off.

To meet today's requirements, modern equipment must be economical. Because it lasts longer—because it saves cleaning and upkeep expense—Monel Metal is economical to a remarkable degree.

In purchasing new display equipment, ask your manufacturer about Monel Metal. Or let us supply you with more information.

MONEL METAL

Monel Metal is a technically controlled Nickel-Copper alloy of high Nickel content. It is mined, smelted, refined, rolled and marketed solely by The International Nickel Company. The name "Monel Metal" is a registered trade mark.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

N. E. M. A. STATISTICS GAUGE PRODUCTION BY MAN-HOUR SCALE

New York, N. Y.—The following statement was filed by Clarence L. Collens, president of the National Electrical Manufacturers' Association, at the meeting of the Chamber of Commerce of the United States, at Washington, D. C., held in December:

National Electrical Manufacturers' Association does not cover the entire field of electrical manufacture. Large central station apparatus and power generating equipment in general are excluded, as are also motors above 200 h. p. No incandescent lamps are included in its field, and it takes cognizance of only a portion of radio manufacture. The figures given herein, therefore, are exclusive of this production.

In an effort to obtain a reasonably definite picture of the present state of the industry and its expectation for the first six months of 1930, a letter was addressed to 350 member companies, and replies were received from 178. This letter asked for the number of productive man-hours worked in September, October and November, 1928, and for the similar period in 1929. It also asked for the productive man-hours worked in the first six months of 1929, and the anticipation for the first six months of 1930. It also asked for the condition of inventories as of December 1, 1928, and December 1, 1929.

The totals indicated an increase of 14% in productive man-hours for the current three months of 1929 over 1928, an anticipation of a decrease of 3½% for the first six months of 1930 over 1929, and, excluding mechanical refrigeration, an almost identical inventory condition. Making approximations to cover companies not reporting or not included for one reason or another, the labor involved is in the neighborhood of 500,000,000 man-hours per year. These figures would indicate the industry to be in a thoroughly healthy condition.

The increase of 14% for the current three months was expectable and does not indicate any material shrinkage in production due to recent market conditions. It is probable that sales figures would have been a better index, but it was not believed that these could be obtained.

A much wider response would have been secured had time permitted. It is believed that response is creditable when it is realized that but four working days were available.

The field covered by National Electrical Manufacturers' Association is divided into 48 sections, each devoted to a characteristic line of apparatus. These sections are again grouped into divisions, of which there are a total of 10, as follows:

Appliance Division — Cognizance of fans, electric ranges, water heating apparatus and heating appliances, such as toasters, flatirons, radiant heaters, etc. The productive man-hours per year are of the order of 50,000,000. An increase of productive activity of 3% for the current three months is shown, and an anticipated increase for 1930 over 1929 of 6%. Inventories are 7% less than in 1928.

Electric Refrigeration—No real figures can be given, as insufficient report was received. The outstanding characteristic is an anticipation of an increase of 16% for the first six months of 1930 over corresponding 1929 period. Inventories are definitely higher — possibly 10%.

Industrial Lighting Division—Cognizance of fixtures, reflectors, etc., for street, factory, store and building lighting. Production of the order of 5,200,000 man-hours per year. Current three months' condition plus 7%. Anticipation of first six months of 1930 plus 30%. Inventories 6% higher.

Industrial Heating Division—Cognizance of electrical furnaces, electric welding, etc. Production of the order of 5,000,000 man-hours per year. Increase in activity for current three months over 1928, 38%. Anticipation first six months, 1930, minus 14%. Inventories—increase 30%.

Insulating Material Division—Cognizance of vulcanized fibre, mica products, laminated phenolic products and moulded material. Production of the order of 35,000,000 man-hours per year. Increase in current three months over corresponding period of 1928, 18%. Anticipation for the first six months of 1930, a decrease of 14%. Inventories 2% lower than in 1928.

Overhead Trolley Line Material Section—Production of the order of 4,200,000 man-hours per year. Increase in current three months of 1929 over 1928, 10%. Anticipation first six months of 1930, increase 14%. Inventories definitely higher.

Radio Division—The material covered includes no assembled receiving sets, but purely material entering into such sets, such as wire, sockets, condensers, etc., etc. Production of the order of 8,000,000 man-hours per year. Increase for the current three months, 20%. Anticipation for the first six months of 1930, minus 32%. Inventories, decrease 8%.

Transmission and Primary Distribution Division—Cognizance of high voltage insulators, switch gear, transformers, electrical measuring instruments, etc. Production of the order of 50,000,000 man-hours per year. Increase current three months over 1928, 10%. Anticipation first six months, 1930, 10%. Inventories, increase 17%.

Utilization and Control Division — Cognizance of material for power application, such as motors and generators up to 200 h. p., industrial control, small circuit breakers, mining and industrial locomotives, panel and distribution boards, signalling apparatus, carbon products. Production of the order of 130,000,000 man-hours per year. Increase of current three months over 1928, 15%. Anticipation first six months, 1930, decrease 13%. Inventories up 6½%.

Wiring Devices Division—Cognizance of attachment plugs, fuses, knife switches, enclosed switches, lamp sockets, receptacles, snap switches, etc. Production of the order of 32,000,000 productive man-hours per year. Increase current three months, 13% over 1928. Anticipation first six months, 1930, decrease 6%. Inventories up 20%.

Wiring Materials Division — Cognizance of bare and weatherproof wire, flexible cord, heater cord, magnet wire, power cable, rubber-covered wire, etc. Production of the order of 145,000,000 man-hours per year. Increase of current three months over corresponding period of 1928, 13%. Anticipation first six months of 1930, decrease 2½%. Inventories up 6%.

It should be noted that the electrical manufacturing industry can, of itself, initiate little production, and that in the main its activity depends upon the activity of the fields that it serves. The estimates for the first six months of 1930, therefore, are based on an estimate of conditions beyond the control of the producing companies. They represent, however, the average of the opinion of 178 companies, each in close contact with its own field.

It seems notable that the divisions dealing with goods for household application, such as heating appliances and refrigerators, definitely anticipate increases, 6% and 16%, respectively. This would indicate an opinion that the general public purchasing power is not seriously impaired.

Radio is a notable exception, with an anticipation of decrease of 32%. This, however, covers material sold mostly to manufacturers of receiving sets.

Purely industrial application indicates the opposite opinion—a decrease of 4% in insulating material—13% in utilization and control being registered as the opinions of the companies involved.

The anticipated decrease of 6% and 2½% in wiring devices and wiring materials, respectively, would indicate a feeling that construction would not be as active as in the first six months of 1929. The smaller decrease in wiring materials might be explained by an anticipation of more activity in power cable and similar material used in the extension of utilities' properties.

The industry as a whole appears healthy and to anticipate a continuance of substantially normal activity during the coming six months, save in the case of radio.

K Stands for Kelvinator in Boston

New England's Kelvinator friends arranged their banquet tables in the form of the letter K at the Kenmore.

TWO PIONEER BUFFALO COMPANIES CONSOLIDATE

Buffalo, N. Y.—A. F. Meyer & Sons Company, Inc., pioneers locally in the field of electric refrigeration, and representatives of Frigidaire, and the Smith Supply & Equipment Company, Inc., another long-established store fixture firm, announced a merger effective January 1, 1930. The merged companies will operate under the firm name of the Meyer-Smith Company, Inc.

A. F. Meyer & Sons Co., Inc., was established in 1882, and the Smith Supply & Equipment Co., Inc., was founded in 1870. The officers of the new corporation are: Edward J. Meyer, president and general manager; George M. Wiedemer, vice-president, treasurer and sales manager, and Edward J. Meyer, Jr., secretary.

President Edward J. Meyer has been associated with the store equipment and refrigeration business for 35 years, when he first joined forces with his father, August F. Meyer, who started the establishment in 1882, and who retired from the active presidency only recently at the age of 80. Edward J. Meyer's two sons, Edward J., Jr., and Albert, after college educations in mechanical engineering, joined their father and are still with him in the new firm.

Vice-President George M. Wiedemer first became connected with the Smith Supply & Equipment Co., Inc., 27 years ago, when it was known as John E. Smith's Sons Company, then in the business of manufacturing packing house machinery. Mr. Wiedemer had charge of the butchers' supply section.

BRIGHAM NOW HEADS N. A. CAR CORPORATION

Chicago, Ill.—Erwin R. Brigham was named president of the North American Car Corporation on January 10 to succeed his father, Henry H. Brigham, who died in New York January 4. General Robert E. Wood, president of Sears, Roebuck & Co., was elected to the board of directors to fill the position formerly held by Henry H. Brigham.

Erwin R. Brigham has been vice-president and secretary and a director of the company for the last ten years. He began work in the purchasing department of the company immediately after the war, and has served as head of several of the departments of the company, particularly the tank car and poultry car divisions.

Mr. Brigham announced that the company would continue without interruption its program of expansion. "We will continue to take advantage of opportunities for sound expansion as they develop," he said. "We have in the past year developed the Frigicar, automatic refrigerator car, increased our fleet of cars and acquired the Live Poultry Transit Company. We expect continued growth of the company in all departments."

Time-O-Stat enters 1930 with the finest and most complete line of refrigerator controls it has ever offered. Many are improved in design, appearance, and usefulness.

Too, Time-O-Stat enters 1930 as a national organization, with Distributors and service organizations in 26 industrial centers of the United States and Canada. All are equipped to give quick delivery and friendly co-operation to every commercial refrigerator manufacturer and user of refrigerator controls.

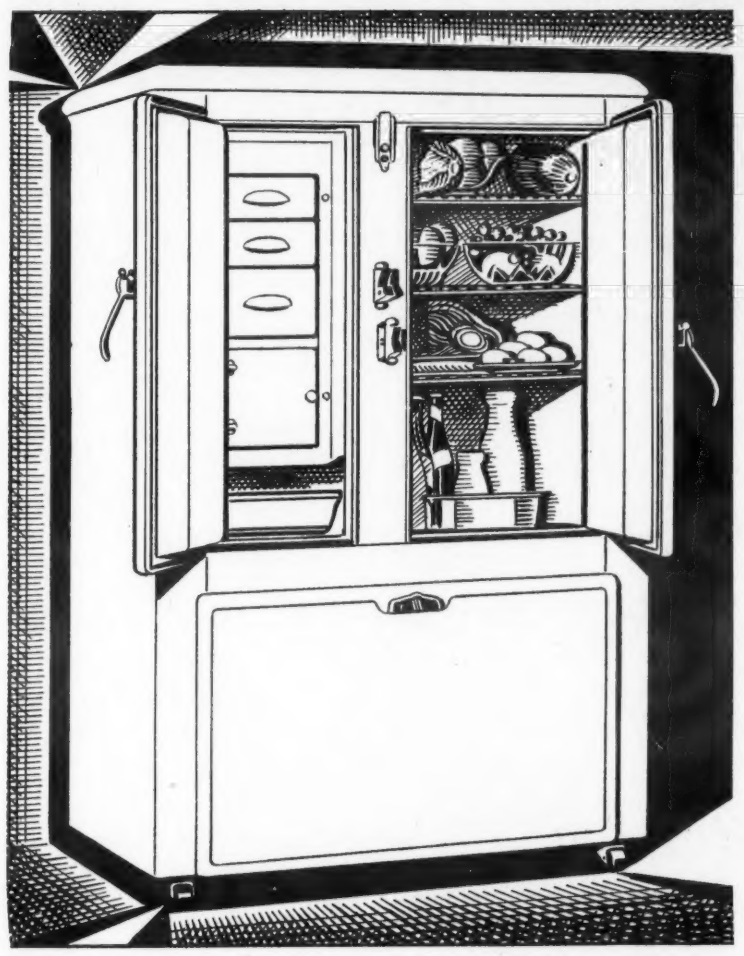
And in 1930, as before, Time-O-Stat's extensive research laboratories welcome the opportunity to work out individual problems of automatic refrigeration control.

TIME-O-STAT
CONTROLS COMPANY
ELKHART, INDIANA

Manufacturers of AUTOMATIC CONTROLS for Oil Burners · Gas Burners · Coal Burners · Electric Refrigerators · Furnace Fans · Mechanical Stokers · Industrial Ovens · Ice Machines · Unit Heaters · also of Sign Flashers · Mercury Switches · Electric Heaters · Corrugated Metal Bellows

THE NEW SUPER-AUTOMATIC KELVINATOR

Has Achieved the Greatest Public Acceptance in Kelvinator History

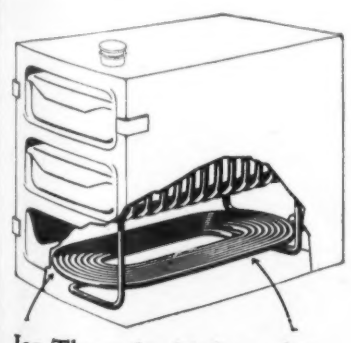


For the *First Time* *4* Degrees of *Cold* Combined in a *Single* Refrigerator

1. For fast freezing
2. For normal freezing
3. For perfect care of foods
4. For cold storage

Each operation completely automatic

WITHOUT exception, Kelvinator dealers report that the new Super-Automatic Kelvinators have been accorded the greatest public reception in all Kelvinator history. Electric refrigeration buyers have been quick to grasp the fact that the new models combine *for the first time,* four separate and distinct services—each operating independently of the others—and all entirely automatic.



Iso-Thermic Tubes for Automatic Fast Freezing

Here is a feature that will appeal to every user of electric refrigeration—a special Kelvinator compartment that gives extra-fast freezing, automatically. Note the spiral coil of Iso-Thermic Tubes, indicated by arrows. This is, in effect, a Cold Plate, in which intense cold is concentrated. Ice cubes and desserts are frozen in half the usual time. Yet food compartments are not affected. A feature exclusive to Kelvinator and standard equipment on all 1930 Kelvinator models.

It is a foregone conclusion that *all* electric refrigeration must eventually measure up to what the new Super-Automatic Kelvinator *is and does.* For never before has an electric refrigerator been produced that has so closely achieved the ultimate goal of electric refrigeration as has this new Kelvinator.

Iso-Thermic Tubes—Kelvinator's newest discovery—stands pre-eminent in the realm of fast-freezing devices. This ingenious device makes possible extra-fast freezing *without controls, regulators or adjustments of any kind,* and further—Iso-Thermic Tubes accomplish this feat *without disturbing the temperatures of the other compartments!* Within 60 seconds after a tray of material to be frozen is slipped into the fast-freezing chamber, Kelvinator's Iso-Thermic Tubes are at work concentrating extreme cold at the point where extreme cold is wanted—and at no other point!

This extra-fast freezing operation is entirely automatic. When the material is frozen, the operation ceases. It needs no attention—and there is no possible danger of food freezing.

In addition to Kelvinator's fast-freezing compartment for ice cubes and desserts, there is also the normal freezing chamber for making ice cubes, desserts, salads and frozen dainties. In the larger models is incorporated a special cold storage compartment where meat, eggs, game, etc., may be stored. This compartment renders a service similar to that of cold storage plants.

The food compartments likewise operate automatically. A temperature of 40 to 50 degrees is constantly maintained. And the Kelvinator Cold-Keeper, acting as a constant reservoir of cold, cuts down operating periods fully one-third.

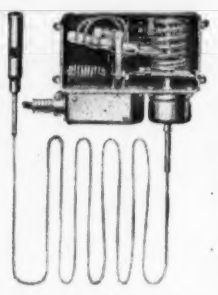
With these exclusive advantages, it is easy to see why Kelvinator dealers are in an impregnable position for the selling season of 1930. And to assist Kelvinator dealers in every possible way to make 1930 their biggest year, Kelvinator has undertaken the most extensive program of advertising and sales promotion in all Kelvinator history.

From a profit standpoint, thousands of dealers have found the Kelvinator franchise without a parallel in the industry. There is still limited territory where Kelvinator is not represented. If you believe that the new Super-Automatic Kelvinator is the kind of refrigerator you would like to merchandise in 1930, we invite you to communicate with us at once.

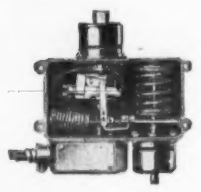
KELVINATOR SALES CORPORATION, DETROIT, MICH.

KELVINATOR OF CANADA, LIMITED, LONDON, ONT. KELVINATOR, LIMITED, LONDON, ENGLAND

MERCOID CONTROLS sold this order for 12 BOXES



No. 848-K and L for temperature control of liquids and gases, adjustable range—K minus 30° to plus 60°. L-1 from plus 10° to 70°.



Model IBA for low side control by pressure. Adjustable range—any cut-in or cut-out points between 25 inches vacuum and 25 lbs. pressure. High side cut-out—adjustable for pressures up to 160 lbs.

A MANUFACTURER in the middle west developed a method of making rancid butter sweet by supplying counteracting bacteria. To develop and keep these bacteria, a constant temperature of 68° was necessary. The ordinary box was used, but naturally the control furnished with the unit was not designed to hold the temperature closely enough.

The local dealer got the order for 12 boxes without any competition by simply installing Mercoids which gave a control of 1° plus or minus. There are thousands of industrial and commercial installations where Mercoid is doing the same kind of work.

For Multiple Hook-ups, etc., the Dual Mercoid provides low side control and high side cut-out in 1 instrument. It can be furnished for either pressure or temperature control of low side. Adjustable over a wide range to furnish "cut-in" and "cut-out" at any desired pressure or temperature.

These controls operate with the well-known Mercoid switch—no exposed arc—no corrosion of contacts—and the control carries full line current, either 110 or 220 volts.

Write today for complete information on these instruments and the Solenoid Valve for water-cooled units.

AMERICAN RADIATOR COMPANY

Accessories Division, Dept. MER-9
40 West 40th Street, New York, N.Y.

MER-10

THE CHIEF ANSWERS THE JUNIOR SALESMAN

"Are customers interested in what's inside the walls?"

"Customers are interested

in anything

that gives them

a bigger money's worth.

Corkboard insulation

becomes

your most interesting sales point

if you tell how

it gives faster freezing,

more constant cold,

lower operating cost

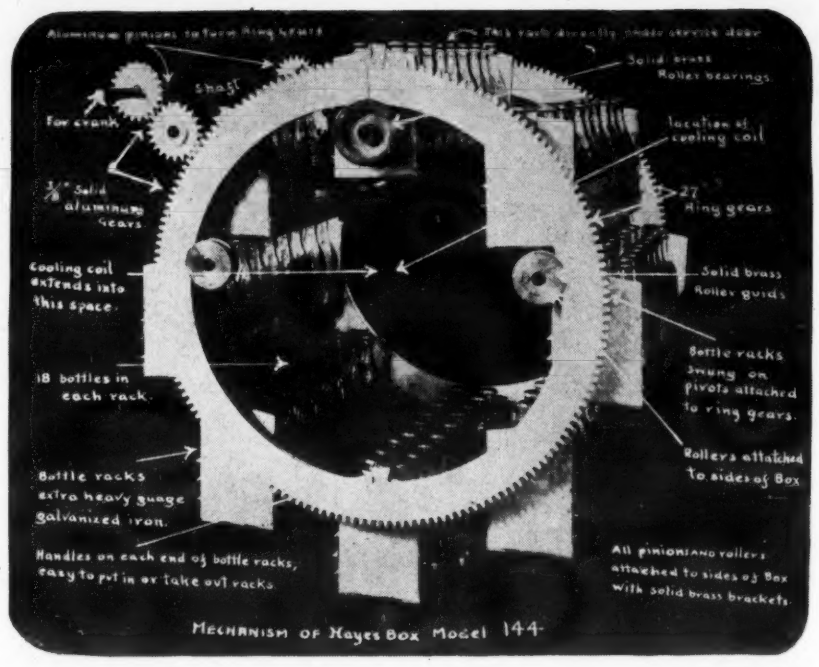
and longer life."

Novoid Corkboard Insulation

CORK IMPORT CORPORATION 345 W. 40TH ST. NEW YORK

"Permanent Protection for All Refrigeration"

Rotary Bottled Beverage Cooler


Aluminum pinions to form Ring gears
This rack directly under service door
Shaft
For crank
Solid brass Roller bearings
Location of cooling coil
3/8" Solid aluminum gears
27" Ring gears
Cooling coil extends into this space
Solid brass Roller guides
18 bottles in each rack
Bottle racks swung on pivots attached to ring gears
Rollers attached to sides of Box
Bottle racks extra heavy guage Galvanized iron
Handles on each end of bottle racks, easy to put in or take out racks
All pinions and rollers attached to sides of Box with solid brass brackets
Mechanism of Hayes Box Model 144

Five models of rotary dispensers for bottle drinks are being manufactured by Hayes Box, Morgan Plan Bank Bldg., Meridian, Miss. These models range in capacity from 96 to 288 bottles. Mechanism of boxes consists of two large ring gears and four small pinions of solid aluminum. All brackets and roller bearings are brass, while bottle racks are of extra heavy gauge galvanized iron. The cooling unit is placed directly in the center of the box and one bottle remains as close to it as another. The racks and bottles rotate around the cooling coil, and always assume an upright position relative to the rotary member.

The ring gears are operated by a crank by which each rack containing bottles can be brought directly under the service door. Each cooler is insulated with 2 inches of sheet corkboard and floor space required by the different models varies from 22 in. x 36 in. to 48½ in. x 36 in.

MILWAUKEE DRAFTING SAFETY ORDINANCE

Milwaukee, Wis.—Odorant qualities of acrolein were demonstrated before the city's committee which drafted the electric refrigeration ordinance by Dr. William D. McNally, consulting toxicologist of the Chicago health department.

Dr. McNally showed that acrolein, when mixed with methyl chloride in a 1 per cent solution, gave off an odor sufficient to warn residents in case of a leak in the refrigerator. Dr. McNally contends that acrolein is the best odorant to use in refrigeration.

The committee has made a first draft of the refrigeration ordinance, which specifies that some odorant must be used. The proposed ordinance will be considered by the common council committee some time this month.

WHAT IS ACROLEIN?

Acrolein, which Dr. William D. McNally, consulting toxicologist of the Chicago Health Department, contends is the best odorant to use as a warning agent in refrigerants, has the following characteristics, according to extracts prepared by A. B. Corey, of the Eastman Kodak Co., Rochester, N. Y.:

Acrolein—From "Condensed Chemical Directory"

Acrolein: (Propenal, Acrylic aldehyde, Acraldehyde) CH_2 CHCHO.

Color and properties: Colorless or yellowish liquid; inflammable; disagreeable choking odor; has a violent action on the eyes; poisonous.

Constants: Specific gravity 0.84; boiling point 52° C. Soluble in water, alcohol and ether.

Derivation: (a) By the oxidation of allyl alcohol. (b) By the distillation of fats. (c) By heating glycerine with potassium bisulfate.

Method of purification: Rectification.

Grades: Technical.

Containers: Iron drums.

Uses: Organic synthesis; manufacture of military poison gas.

Fire hazard: Dangerous.

Railroad shipping regulations: Red label.

American Chemical Society, Monograph Series, "Noxious Gases"

By Henderson and Haggard, Page 133

Pure acrolein is a colorless liquid which boils at 52° C. On exposure to air acrolein is slowly oxidized to acrylic acid. This acid has not the irritating properties characteristic of acrolein.

Acrolein or acrylic aldehyde is formed as heavy fumes when oil or grease is burned. It is a troublesome by-product arising from the rendering of fats in making soap, in the boiling of linseed oil, and in melting down printers' type covered with oily ink. It is the main irritant in the exhaust gas from internal combustion engines; it comes from the burning of the oil used to lubricate the cylinders.

Although acrolein primarily affects the upper respiratory tract in the relatively low concentrations ordinarily inhaled, it is nevertheless said to induce edema of the lungs when inhaled in high concentrations by animals. Prolonged exposure to low concentrations of acrolein causes catarrhal inflammation in both the pharynx and larynx. The toxic concentrations of acrolein are the same as those of phosgene.

TESTING FROZEN FRUITS

The U. S. Department of Agriculture packed 10,000 cans of raw fruits, berries and vegetables last season, by different processes, in order to determine the best method of preserving fresh fruit flavors. The cans were placed in storage in Washington State.

A statement by the Department follows:

To determine the best methods for packing frozen fruits to preserve the fresh fruit flavor with keeping ability, last season 10,000 cans of fruits, berries, and vegetables were frozen, packed by various methods and put in cold storage in the State of Washington under the supervision of H. C. Diehl, in charge of the Washington field headquarters of the horticulture division of the Bureau of Plant Industry, and V. B. Bonney, a chemist of the food control division of the Food, Drug, and Insecticide Administration, Department of Agriculture.

Packing of frozen raw fruits and vegetables in small containers is a new project in the food industry. The products are put up in vacuum sealed tin cans or covered waxed paper containers alone or with sugar, salt, or other packing media, and stored at low temperatures until consumed.

The Department of Agriculture is conducting this experiment in order to better determine the quality of frozen packed products for the benefit of officials enforcing the food and drugs act and in order to give the packers accurate information regarding the different processes now in use, according to Mr. Bonney.

The packing was done at several Washington and Oregon plants where facilities were available for both vacuum sealing and paper cup packing. The work was completed under regular operating conditions with accurate data gathered at every step.

The containers were then placed in cold storage at various constant temperatures where they will remain until December. Part of the pack will be shipped to the Washington, D. C., laboratories for examination by chemists who will determine the quality and condition of the fruits and vegetables so preserved. The remainder will be opened and examined by Mr. Diehl at the places where stored.

By checking between the quality of the product, the method of packing and the temperature at which it was held in storage, the experimenters will know accurately the value of the different methods used.

The products packed include strawberries, raspberries, loganberries, blackberries, currants, pears, cherries, avocados, peaches, peas, cantaloupes, apricots, beans, beets, melons, sweet corn and tomatoes.

"KNOW THE PRODUCT—WORK HARD" URGES PROVIDENCE DEALER

Providence, R. I.—Buckley & Scott, Inc., 137 Broad St., Kelvinator dealer, works on the basis that there are just two reasons why every family, every store and every one else needing refrigeration is not using electric refrigeration. One of these reasons is lack of knowledge of the advantages of electric refrigeration. The other is lack of sufficient income to pay for it, either out of income or in cash. As it is made just as easy to buy an electric refrigerator as it is to buy an automobile, and nearly everyone these days is able to own a car, it follows that practically every family is a prospect.

The problem then is not so much one of finding those with large enough incomes to buy, but rather of teaching people the desirability of possessing an electric refrigerator. Of course, there are still many families with incomes so small that they will have to continue to use ice in a cheap ice box. These families, however, do not compose any very large percentage of the population, even in a strictly industrial center like Providence. The real task then is to impress upon the people the desirable features of this modern method to such a degree that a desire is created which is too great to be resisted.

This dealer holds that there are three things necessary in selling electric refrigeration. The first is a thorough knowledge of the goods. The second is skilled application of this knowledge, and the third is work.

Every new salesman, regardless of his previous experience or his record, is given a thorough course of instruction which may last for a period of ten days. He is taught how refrigeration is accomplished, how and why it preserves food better, and the reasons why it protects health. No effort is made to teach him how to sell until this information about the product is given. The next step is to show him how to apply this knowledge. Though there is considerable difference of opinion in regard to the need of salesmen committing a sales talk to memory and using it verbatim, this dealer holds that it is just as important as that an actor commit his lines to memory and rehearse them before appearing on the stage before an audience.

With the sales talk learned, the salesman is ready for the third step necessary to make a success—that is, the work part of it. There are two types of men—the hard working type and the lazy type. The hard working type will work hard, but he does not always use his brains and plan his work in such a manner as to get the very best results. The lazy type may get very good results from the work actually done, but failing to do a fair day's work every day does not make a real succes.

Accordingly, schedules or quotas are prepared as guides to the salesmen. These show the number of telephone calls that should be made, the number of first calls and the number of follow-up calls. These schedules are planned in such a manner that if a salesman follows them, applies his training and possesses even a resasonable degree of sales ability, there is no reason why he should not succeed. He will utilize his time in an efficient manner.

Salesmen are employed on a commission basis, but it has not been found practical to restrict their territories. On the other hand, some dealers will find that better results are obtained if the territory is divided up into districts, each salesman being given an exclusive district and being credited with all sales made in that district.

In the case of this dealer, the salesmen are protected on their prospects. Each salesman registers his prospects in the office and regardless of where or how the sale is actually made, the salesman who registered that prospect is paid the commission on the sale. A commission is allowed on every office sale. If no salesman has registered the purchaser as a prospect, the money is set aside and used as prize money in a contest, or distributed among the force in some manner that will stimulate increased effort.

This policy goes a long way toward making it possible for the dealer to hold his salesmen. There is nothing that does more to discourage a salesman and cause him to quit than for him to work hard in the effort to close a sale, have the prospect go into the salesroom and close the contract and then not get any commission.

THREE LARGE APARTMENTS INSTALL ELECTROLUX

Evansville, Ind.—J. J. Burns, sales manager of La Clede Gas Light Co., St. Louis, Mo., reports the installation of 96 Electrolux units in new apartments located at 3521-37 Bingham Ave., St. Louis.

Two large apartments in Chicago, Ill., have also been recently equipped with Electrolux units. The Granville, 6241 Winthrop Ave., had 67 refrigerators installed, while the Elm Court apartments, in Chicago's "Gold Coast" had 130.

WATCH...!

WELSBACH WILL SHORTLY ANNOUNCE A BASIC IMPROVEMENT SO RADICAL AND IMPORTANT AS TO COMPLETELY REVOLUTIONIZE HOUSEHOLD REFRIGERATION.

This Valuable Development is Safeguarded by:

Millions of invested Capital . . . . . A modern plant . . . . . A determination to perpetuate and enhance Welsbach's enviable position.

Selling rights for Welsbach Low Pressure Electric Refrigeration constitute a permanent franchise of great value. One may be available in your territory.

WELSBACH COMPANY

Gloucester City (*Near Philadelphia*) New Jersey

Modern Electric Refrigeration Cools Freely Flowing Beer

PROGRESSIVE CAFES ADOPT NEW METHODS DESPITE CHEAP ICE

By Dorothy Dignam

LOOKING at Europe from the standpoint of her free-running rivers of beer and wine, one would think that commercial refrigeration had long since conquered the cooling problem. In fact, one of my first assignments on the Continent was to get the true and authentic story of the way that all the beer halls and cafes were using electric refrigeration!

They're not all doing any such thing, of course. But the sales resistance comes from some rather odd sources.

In Germany, for instance, the breweries give away or sell for a few pfennigs as much ice as their customers require. It's not easy to sell a cafe man on mechanical cold at big initial cost when he's getting ice for nothing! In many towns, in fact, you'll find more butcher shops than beer halls using electric refrigeration.

In France the national beverage is wine, but not all wines are relished cold. Indeed, a recent book on dining in Paris reminds you, when ordering a restaurant dinner, to have the red Bordeaux or Burgundy brought up from the cellar and warmed for two hours to mellow the flavor. The taste is said to be truer when there's no cold to shock the palate. Rhine wines, however, are wanted cold and French white wine is even iced. But cellars have been so sacred to this chilling process in general, that any efficient mechanical substitute seems to shatter all traditions.

Carry the Coil to the Cave

In Germany, however, they've carried the coil to the cave, so custom is perfectly served. Instead of refrigerating the beer in bottles, the fluid is left in its wooden kegs and the cooling coils are placed in the storeroom. This is usually directly under the bar, and the beer is drawn off the wood, piped upstairs under air pressure and dispensed through a draught arm—just like an American soda fountain. Chilling the wooden kegs, of course, only lightly cools the beer, but this is all the German requires, except in very warm weather. American tourists want ice in their beer—and the British drink theirs warm!

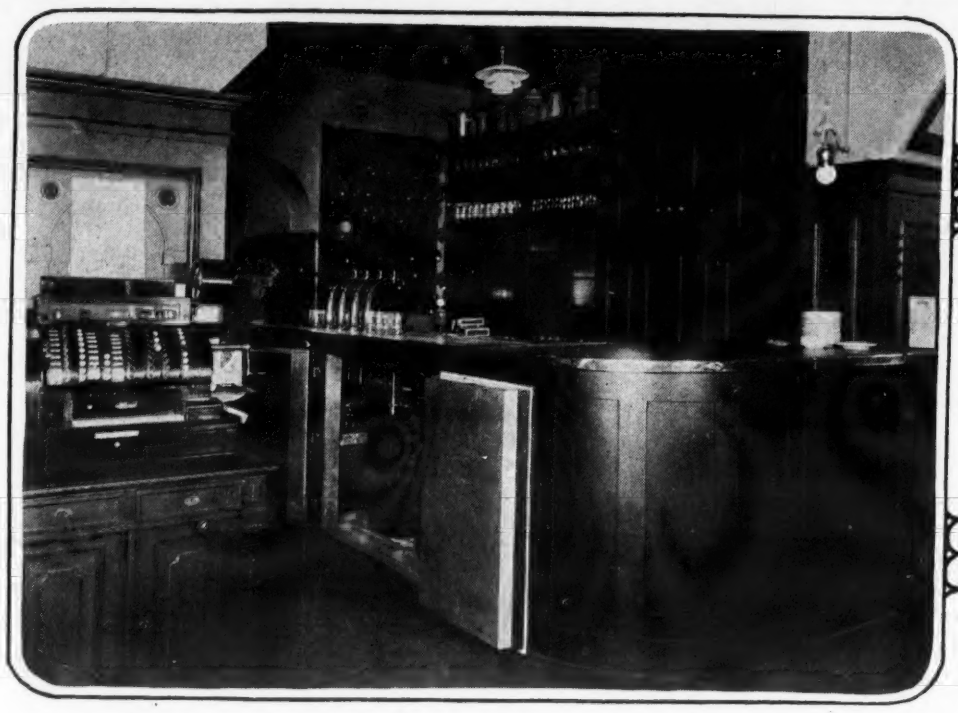
Wines, when chilled, are cooled and served in the bottle. All except the workingman's kind. He likes his drawn from the cask into a small carafe and placed on his table with another jug of water. It is possible then to dilute the drink and make it last a couple of hours.

In large cafes there will be two types of equipment for cooling wines and champagne. A set of deep metal cylinders or jackets, set into a brine tank, and each jacket holding a bottle ready for use. This is the ready supply, on hand at the bar, and chilled for serving without addition of ice. Then a stock of reserves will be stored under lock in a large cooling cabinet set at 50 degrees or under.

Frigidaire, Ltd., has probably made a deeper study of this market than any native manufacturer of electrical equipment. Their first work has been to do a satisfactory job on installations in existing cabinets and "caves." Recently, however, they've worked out exclusive bottle-cooling cabinets that the Germans have received well at their fairs and exhibitions. One of these designs is a portable cooler that allows a wine selection to be wheeled to your table.

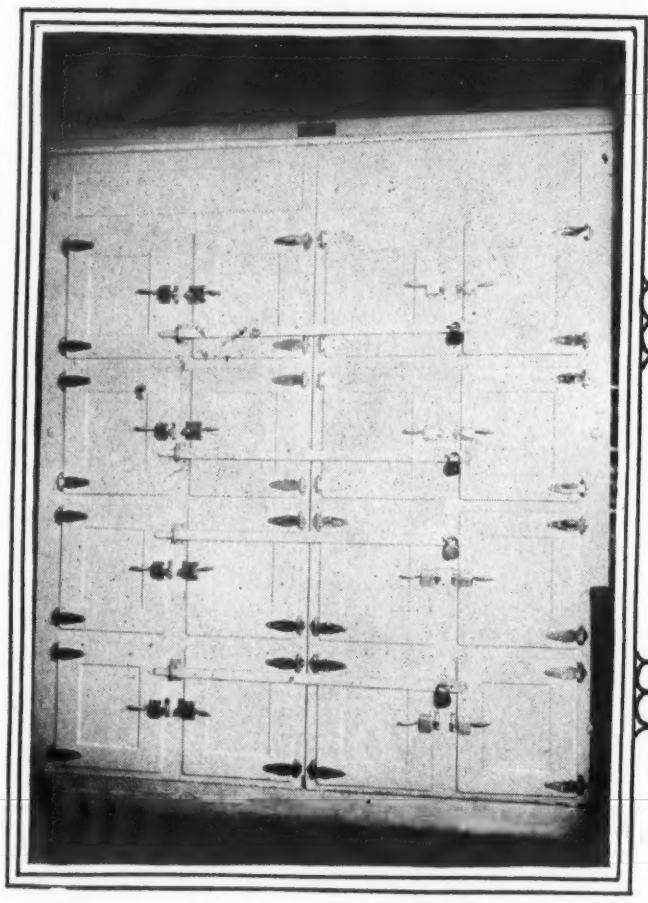
Cold Speeds Aging Process

And cold has some entirely different applications in this field, as well. It's being used to "age" wines—since this is the era of hustling things up! A good wine will have about the same span of years as a human being, reaching its prime at thirty or forty years. Cold can be made to hasten this process, however, and to retard the growth of other agencies that harm the flavor. Experiments along this line are coming from the School of Fermentation at Ghent, in Belgium, and will be reported by the Institut International du Froid.

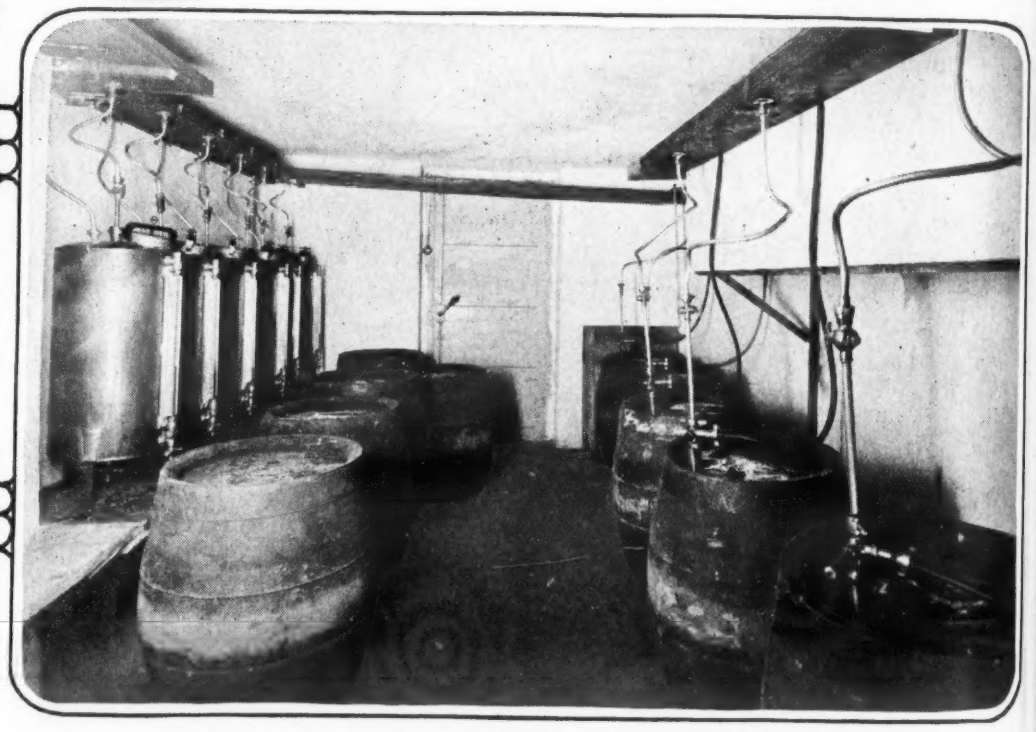


THE beer cooling equipment is directly under the counter of the bar in this Dresden cafe and the frosty fluid is "drawn off the wood" through draught arms—exactly like sodawater in an American drug store! The entire space inside the counter is refrigerated—a miniature cool room. Notice the object on the back wall that resembles an electric signal board. This is really a collection of customers' glass beer mugs, tagged with their respective names, and hung over pegs to await the next round of conviviality.

A combination liquor cooler and refrigerated display case for cooked foods, in a railway restaurant at Leipzig. The wine bottles can be seen in their chilled cylinders below the showcase. They are reposing on their sides as all good wine should do.



The wine cabinet is kept under lock and key. A German-built cooler with electric installation by Frigidaire, Ltd. This outfit has an up-to-the-minute appearance that the other three photographs on this page seem to lack.



The modern version of the old German wine cellar, where the beer is drawn off the kegs and piped upstairs to the bar under air pressure—no pumps required. A Frigidaire unit is placed behind the apron on the right wall. Since heat must be extracted through the wooden casks, the beer, as received upstairs, is not as low in temperature as the "ice cold stein" that America once hailed.

GEORGE A. HUGHES ELECTED PRESIDENT OF CHICAGO ELECTRICAL ASSOCIATION

Chicago, Ill.—George A. Hughes, president of the Edison Electric Appliance Company, has been elected president of the Electrical Association of Chicago. Other new officers are: W. O. Batthelder, F. S. Berry, F. Lee Farmer, John A. Gleason, Samuel G. Meiler and J. N. Pierce, vice-presidents; A. A. Gray and A. R. Bone, secretaries.

ABSOPURE NAMES FOREIGN REPRESENTATIVE

Detroit, Mich.—Marcel Glass has been appointed European representative for the Absopure Refrigeration Corp. Mr. Glass will sail from New York on Jan. 17 for Paris, where he will maintain headquarters.

The Campagnie Chaleur et Froid (Heat and Cold), 32 Avenue Rapp, Paris, has recently been appointed distributor. Representatives for the southern part of France will be the firm of Laurent Bouillet, 30 rue Trackel, Nice. This firm has just taken an order for the installation of 129 units in an apartment building. This job is reported to be the largest in France and the first on the Riveria.

Distributors will be appointed in other countries of Europe and North Africa.

ADDITIONS TO STAFF OF KUNKEL'S, INC.

Baltimore, Md.—The following refrigeration men have joined the organization of Kunkel's, Inc., 140 North Liberty Street, Baltimore, retail distributors for Electrolux refrigerators: Dell Horn, formerly educational director of the Frigidaire branch in Baltimore; W. Childs, formerly with Childs and Barnhart, refrigeration dealers; M. Meyers, formerly of Frigidaire and General Electric; J. Caughy, formerly with Eisenberg's department store; James B. Brennan, G. E. Grey, H. B. Jennings, Joseph Ludwig, Jack Tribby, R. E. Heiland and R. Streithoff, all formerly connected with the local Frigidaire branch.

COPELAND EXPORT MAN IN PORTO RICO

Detroit, Mich.—J. C. Mathews, general manager of H. M. Robins Co., export representatives, sailed from New York, January 9, for San Juan, Porto Rico, on the S.S. San Lorenzo. Mr. Mathews will spend some time in Porto Rico and Cuba in the interest of Copeland electric refrigeration, which is handled in the export field by the Robins Co.

RUDOLPH JOINS TOLEDO G. E. BRANCH

Toledo, O.—R. R. Rudolph, formerly with the Insulite Co., has joined the retail sales force of the refrigeration department of the General Electric Supply Corp., Richardson building. Mr. Rudolph will be identified with the apartment and new building department of the company.

Have You a Binder for Keeping Your Copies of Electric Refrigeration News?

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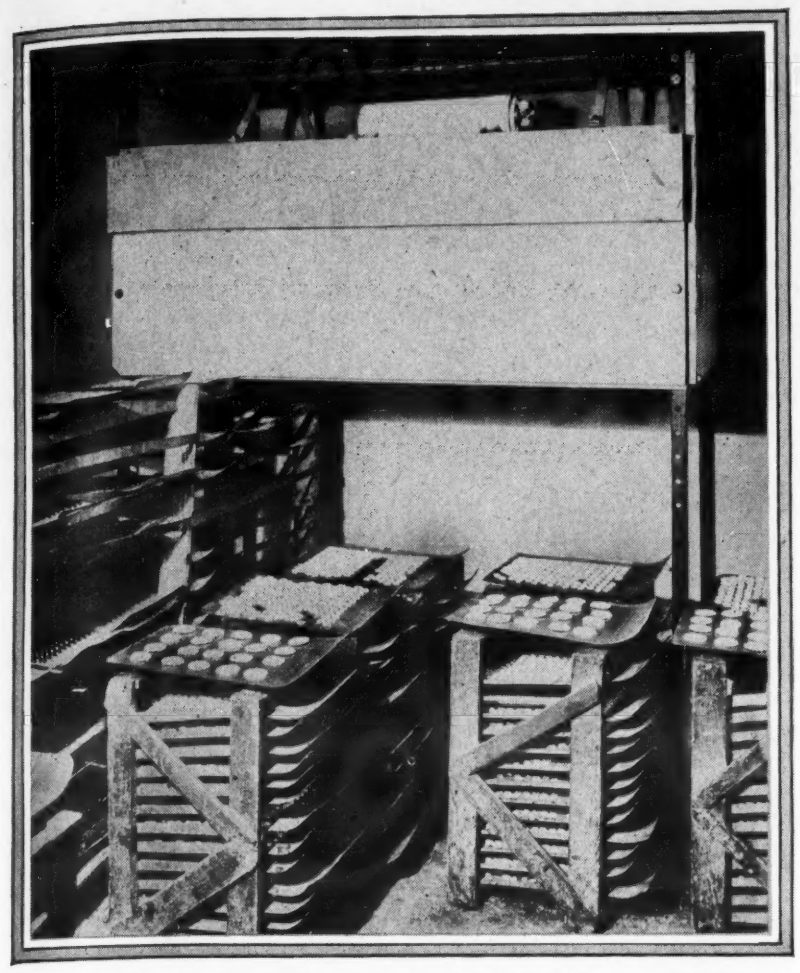
ELECTRIC REFRIGERATION NEWS

550 Maccabees Bldg. **Detroit, Mich.**

and Wine in Germany



A SIMPLE but successful installation is pictured in a chocolate coolroom in Berlin. A vertical fin coil of 400 lbs. ice melting capacity is used, regulated to about 60 degrees. The cold air drops from under the housing of the coil.

DELICIOUS PASTRIES SHARE IN BENEFITS OF COOLING SYSTEMS

IT is difficult, with our own apple pie complex, to understand the importance of so-called French pastry in the Continental diet.

In the first place, French pastry isn't really French at all. The family of ethereal puffs and creams and superfrosted cake originated in Vienna, where the finest pastry in the world is still created.

But this highly concentrated sweet fills much the same place with Europeans as the American box of Sunday chocolates, and like candy, it is nibbled between meals, but always with coffee, to balance the richness. The German business man, "believe it or not," gets just as much enjoyment out of his late afternoon coffee and selection of pastry as the American mind might suppose him to get from a big glass of bock! So that pastry-making on the whole is an industry of importance, and American refrigerating engineers are doing some interesting work in converting cool rooms, chilling cabinets and display cases.

Cold is first required in the actual production of pastry—to chill the creams and frostings and to hasten the "setting" process in gelatine desserts. Then chilled storage space must be provided for the entire supply, until drawn on for the dining room or cafe.

A refrigerator for rapid chilling, called in Germany a "freezing cabinet," must maintain a 40 degree temperature. (All temperatures herein mentioned have been translated into Fahrenheit.) Garnitures of whipped cream also demand a low temperature to help them "hold up." Garnitures of butter cream and marshmallow require less care, however.

Many old pastry-cooling cabinets have been electrified by Frigidaire and Kelvinator, and the trick is to find where the cooling coils have mysteriously been hidden. You don't always find them in the regulation ice chamber. For instance, a big pastry-cooler has a vertical fin coil placed across the entire top of the cabinet in a section which was given added height to accommodate it. The ice chamber affords additional chilling space for fancy desserts. In an adaptation of this kind, proper air circulation must be worked out just as carefully as the chilling of the air itself.

Another type of installation is in the pastry display case which serves a double sales purpose in the front of the shop. Small German cafes for coffee and pastry (not beer halls) are frequently combined with bakeries and confection stores, so the pastry display case lures you first to the back of the shop where coffee is served, then it gets you again on the way going out, to suggest a purchase for taking home.

These display cases, if used only as a storage for torte—that delicious rich cake of eight or ten layers—and a few small English tarts, requires only a temperature of 50 to 60 degrees. Cakes for immediate cutting are kept out on the counter, to avoid opening and closing the cabinet doors.

Locally built display cases are successfully equipped with American units, and the compressor is also utilized for the large kitchen refrigerator.

A third type of installation is in candy cool rooms where not only the enrobings on chocolates are cooled, but the coatings on many small candy-like wafers—some more of the French-Viennese pastry. Trays of these chocolate-coated and cocoanut-dipped patties or wafers are shown in the coolroom illustration.

Here the refrigerating installation is usually rugged and practical, economies can be effected on the side of appearances. A steel frame is set up, the freezing coil suspended in it, and sufficient housing with baffles added to direct the air circulation. The temperature in a chocolate cooling room depends, of course, on local climatic conditions, especially the air humidity. Berlin on the whole is cool and more likely to have a damp-cold air than American humid heat. Temperatures would not need to be so low, therefore, as in New York or Chicago, but this is a matter for scientific adjustment.

STABILIZING AN INDUSTRY IS NO SMALL JOB

THE PENNSYLVANIA STATE COLLEGE
State College, Pa.
Department of Mechanical Engineering
January 3, 1930.

Electric Refrigeration News,
Detroit, Michigan.

I have read with a great deal of interest the editorial in your issue of December 18, entitled, "Development of the Art." The Society has been indebted to you for giving your encouragement and support to the development of the industry along its various branches, especially as it relates to pioneering and to research work.

Your personal reference in that article to the small part which I have played in trying to further this interest in the industry, is very much appreciated. Stabilizing an industry is no small job, but in the end its success depends very largely upon far-sighted policies and in those efforts in encouraging new developments which are worthy of support. I wish you every success in continuing your good work through Electric Refrigeration News.

A. J. WOOD,
Head of the Department.

LOS ANGELES CO. OPENS SEATTLE BRANCH

Seattle, Wash.—A local factory branch of Commercial Refrigerator Mfg. Co., Los Angeles, Calif., was established at 1908 Boren Ave., Jan. 1, 1930. S. K. Burrington is Northwest manager.

.12 to .08

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ELECTRIC REFRIGERATION NEWS

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The Future of Quick Freezing

WITH increasing frequency in the last few months The News has had occasion to mention, both in its news columns and editorially, the quick freezing of food. An interest in this subject is spreading throughout the country, not only among refrigeration men, but among those who are identified directly with the production and distribution of food. Quick freezing is no mere refrigeration process evolved by refrigeration engineers. It is a new means for the distribution, preservation and safeguarding of food, and as such is of vital interest to every man, woman and child in the land.

What the future of quick freezing will be is hard to predict at this time. The process itself is too new, and effective as it seems to be, it still leaves room for considerable necessary experimentation. Results in the freezing of different kinds of food are not uniform, a fact which outlines one problem not yet solved.

And what of the problem of distribution? The great meat packers are seriously considering quick freezing; but it is the distribution problem that baffles them. The producers of fish on the Atlantic seaboard have been among the pioneers in the new development, but they too are doubtful about readjusting the country's channels of distribution. It can't be done over night, and it certainly can't be done without the cooperation of the refrigeration industry which will be called upon to manufacture and install the equipment which inevitably will be needed.

So much for the problems. There doubtless are more of them but we must have mentioned enough to create a healthy respect for the work in hand. Suppose that they all are solved, and are solved with promptness and dispatch. What will happen then? The opportunities seem almost limitless. The fish people see fresh seafood going into every little village between the Atlantic and the Pacific. The fruit growers see fresh fruit of every kind on every table at every season of the year. The meat packers see fresh meat served, not only in all parts of the United States, but in countries and whole sections of the world where it is now a rarity. The possibilities of the situation are all but beyond imagining.

Quick freezing has no chance of success unless the means are provided both in the store and in the home for preserving the foods which have been so frozen. Display cabinets must be made for the shopkeeper, adequate cold storage must be provided in the home. The present equipment will be inadequate, and that is one reason why the men, who know most about quick freezing and who have the highest hopes for its success, are reluctant to move too swiftly. The worst thing that could happen—and here and there it is beginning to occur—would be the premature attempt to sell quick frozen food without providing proper means for keeping it at a low temperature while in the hands of the retailer. And even after it leaves his hands the low temperature must be maintained until the time comes for the food to be prepared for eating.

The processes necessary for preparing the food must be taught to the public. A campaign of education will be needed. But before the public can be taught new ways, the men who handle the new products must know the subject of quick freezing from A to Z. The whole matter is at once so new and so great in possibilities that every scrap of information in regard to it will be in demand. No one identified with the distribution of food at any point on the long road from producer to consumer will be able to do a good job unless he knows the whys and wherefores of quick freezing. And at every point along that road the men of the refrigeration industry will be needed. Their advice will be sought, their products will be purchased and installed as integral units in the machinery of distribution. To make their products fit for the job, they in turn must know the processes involved from beginning to end. They will have to call on their engineers and scientists for more accurate information than they have demanded in the past. They will then design their display cases and cold storage units, secure in the knowledge that the job will be handed efficiently.

The opportunity is here. The refrigeration industry is called upon to do its part.

European G. E. Men Hold Meeting in Paris

Left to right—clockwise around the table—C. W. Miller, I. G. E. Co., Paris; Mr. Trolliet, Switzerland; H. H. Needham, I. G. E. Co., Paris; Mr. Hely, Societe Alsthom, Paris; P. W. Forsberg, I. G. E. Co., Paris; Mr. Detoeuf, Societe Alsthom, Paris; Mr. Baldwin, I. G. E. Co., Paris; Mr. Le Bourhys, Societe Alsthom, Paris; G. S. Eveleth, I. G. E. Co., Paris; Mr. Melendreras, S. I. C. E., Spain; C. M. Popp, I. G. E. Co., Paris; Mr. Gutekunst, C. G. E., Italy; W. H. Taylor, I. G. E. Co., Paris; H. C. Stone, Societe Alsthom, Paris; Mr. Wolff, I. G. E. Co., Paris; Mr. Mulders, Mijnssen & Co., Holland; L. Lehureaux, I. G. E. Co., Paris; J. Boyau, Societe Alsthom, Paris; C. F. Neave, I. G. E. Co., Paris; Mr. Charles, S. E. M., Belgium; P. Chaumartin, I. G. E. Co., Paris; Mr. Dille, Societe Alsthom, Paris; Mr. Dubbels, I. G. E. Co., Paris; Mr. Weeks, B. T. H. Co., England.

Paris, France.—European agents for General Electric refrigerators convened here December 16-19, to discuss various phases of the electric refrigeration business in Europe and to formulate plans for 1930. Representatives from France, England, Germany, Belgium, Holland, Switzerland, Italy and Spain attended

C. F. Neave, manager of the Refrigeration Department of International General Electric Co., opened the meeting on Monday, Dec. 16, and welcomed the visiting representatives. During the morning session talks on the "History of Refrigeration" were given by Messrs. Wolff, Miller and Hely.

At the afternoon session a new centralized advertising scheme was submitted by Mr. Neave. Papers on the "Market Possibilities," "Study of the Belgian Market," "Marketing Through Agents or Exclusive Stores," "Selection of Agents" and "Display and Store Arrangements" were presented by Mr. Eveleth, of I. G. E. Co.; Mr. Charles, of S. E. M., Belgium; J. Boyau, of Alsthom Co., France; Mr. Gutekunst of, C. G. E., Italy, and Mr. Hely, of Alsthom Co.

On Monday evening a banquet given at the Restaurant Viel was addressed by Mr. Baldwin, vice-president of International General Electric Co.; Mr. Detoeuf, director of Alsthom Co., and Mr. Neave.

The Tuesday meeting included papers on "Apartment House Sales," "The Need and Market for Commercial Refrigeration," "The General Electric Commercial Line," by Mr. Boyau, of Alsthom Co.; Mr. Pinat and W. H. Taylor, of I. E. G. Co. Animated films were used to demonstrate the General Electric machine and its control. Dinner at the Restaurant "Le Bon Vigneron" was followed by a theatre party at the Theatre de Paris.

On the final day a paper on the "Study and Design of Commercial Cabinets" was presented by C. W. Miller, of I. E. G. Co., after which the meeting was opened for general discussion. Representatives were very optimistic about the prospects for 1930. The addition of General Electric commercial units was received with great enthusiasm by the agents who were present at the conference.

REQUESTS FOR INFORMATION

Readers who can assist in furnishing correct answers to inquiries, or who can supply additional information, are invited to address ELECTRIC REFRIGERATION NEWS, referring to the query number.

Query No. 325—Can you give us the name of some firm which can furnish us with receipts for frozen desserts, etc., for use in connection with electric refrigerators?

Refrigeration Books

Query No. 326—"Will you please give us a list of all the books best for refrigeration knowledge? We are starting a library and believe that you can help us."

Answer—The following books may be obtained by sending order and remittance to Electric Refrigeration News:

Principles of Refrigeration (1926). By W. H. Motz	$ 5.00
Refrigeration Memoranda (10th Edition). By John Levey	1.00
Practical Refrigerating Engineers' Pocketbook (1922). By John E. Starr	2.50
Household Refrigeration (Third Edition Revised and Enlarged). By H. B. Hull	3.50
Compression Refrigerating Machine, The. By Gardner T. Voorhees	6.50
Indicating the Refrigerating Machine (Second Edition). By Gardner T. Voorhees	2.00
Absorption Refrigerating Machine, The (Elementary Theory and Practice) (2nd Edition, Revised and Amplified). By Gardner T. Voorhees	2.50
Absorption Refrigerating Machine, The (Advanced Theory and Practice). By Gardner T. Voorhees	6.00
Ammonia Compression Refrigerating System. By W. S. Doan	2.50
Water for Ice Making and Refrigeration. By Charles H. Ehrenfeld and Ralph E. Gibbs	3.50
Cork Insulation. By P. Edwin Thomas	3.50
Modern Packing House, The. By F. W. Bilder. Revised and Amplified by D. I. Davis	10.00
Packing House and Cold Storage Construction. By H. Peter Henschien	5.00
Mohun on Warehousemen (2nd Edition). By Barry Mohun	7.50
Law of Draymen, Forwarders and Warehousemen. By Gustav H. Bunge	5.00
Principles of Mechanical Refrigeration (1928). By H. J. MacIntire	3.00
Refrigeration. By M. W. Arrowood	2.50
Refrigerating Machines, Compression, Absorption. By Gardner T. Voorhees, London	2.00
Power's Practical Refrigeration (2nd Edition). By L. H. Morrison	2.50
Elementary Mechanical Refrigeration. By F. E. Matthews	2.50
Elements of Refrigeration. By A. M. Greene, Jr.	4.50
Mechanical and Refrigerating Engineers' Handbook. By Otto Luhr	5.00
Handbook of Mechanical Refrigeration. By H. J. MacIntire	7.50
Audel's Answers on Refrigeration (One Volume)	2.00
Power Plants and Refrigeration. By L. A. Harding and A. C. Willard	6.00
Engineering Thermodynamics. By C. E. Lucke	8.00
Applied Thermodynamics (4th Edition). By Wm. D. Ennis, M. E.	5.00
Elements of Engineering Thermodynamics. By J. A. Moyer, J. P. Calderwood and A. A. Potter	2.50
Thermodynamic Properties of Ammonia, The. By F. G. Keys and R. R. Brownless	1.50
Properties of Steam and Ammonia. By Goodenough	2.00
Ammonia and Its Compounds, Their Manufacture and Uses. By Camille Vincent	2.50
Theory of Heat. By J. Clark Maxwell, London	2.50
Elementary Lessons in Heat. By S. E. Tilman	1.50
Elements of Heat Power Engineering. By Hirschfield and Barnard	5.00
Heat Engineering. By Grene	4.50
Mechanical Engineer's Handbook (10th Edition). By Wm. Kent	7.50
Mechanical Engineer's Handbook. By L. S. Marks	6.00
Freezing Point, Boiling Point and Conductivity Methods. By Harry C. Jones	1.25
Temperature Entropy Diagram, The. By C. W. Berry	3.00
Sanitary Refrigeration and Ice Making. By J. J. Cosgrove	3.50
Handbook for Heating and Ventilating Engineers. By Jas. D. Hoffman and B. F. Raber	4.50
Packing Industry, The. By Institute of American Meat Packers	3.00
Packers' Encyclopedia and Directory. By Paul I. Aldrich	12.00
Cold Storage Heating and Ventilating on Board Ship. By Sydney F. Walker	2.50
Ice Cream Plant and Manufacture. By Robert C. Leid, London	2.50
Manufacture of Ice Cream and Ices, The. By Frandsom and Markam	2.25
Book of Ice Cream, The. By W. W. Fisk	3.50
Dairy Technology. By C. Larsen and Wm. White	2.00
Encyclopedia of Foods. By Artemus Ward	10.00
Cork, Its Origin and Industrial Uses. By Gilbert Stecher	1.00
Liquid Air and Purification of Gases. By T. O'Connor Sloane	3.00
Industrial Uses of Water. By H. De La Coux, London	5.00
Ice and Refrigeration Blue Book and Buyers' Guide (10th Edition, a Directory). Nickerson & Collins Co., Chicago	12.00
Theoretical and Practical Ammonia Refrigeration (3rd Edition). By Lloyd I. Redwood	1.50
Ice and Cold Storage Trades Directory. London	3.00
Noxious Gases and the Principles of Respiration Influencing Their Action. By Yandell Henderson and Howard W. Haggard	4.50

Sales Figures

Query No. 328—(Telegram)—"Taking McGraw-Hill estimate of million eight hundred fifty thousand total electric refrigerator sales to 1930 can you estimate percentage of sales divided between domestic, commercial and water coolers, placing multiples with domestic collect. Also total export sale to date. Rough estimate sufficient. Please wire if possible."

Answer—(Telegram)—We have not discovered any reliable basis for breaking down sales according to domestic or commercial applications. Manufacturers say they have no way of knowing for which purpose machine is used and apparently do not attempt to secure the information. This data very desirable, and we regret inability to furnish it. Exports of units up to one-ton capacity for 1927 were 22,588, for 1928 were 35,712, and for first ten months of 1929 were 63,777; total, 122,077. No data on previous years.—Editor.

(See additional queries on Page 24)

This Problem of Salesmen

By Frank W. Gray

"WHERE can we get salesmen competent to sell electric refrigeration equipment?" This is the cry of sales managers all over the country. And the newspapers re-echo the cry through their classified ad columns—"A real opportunity for a few live wires"—"A future awaits you in this fast growing business"—"Salesmen, here is the opportunity of a lifetime." Salesmen, wanted, wanted, wanted. Out goes the appeal to the selling profession at large, and back comes the response in a varied assortment of applicants.

Today the world is selling and reselling itself. Yesterday selling methods were conservative and prosaic, confined largely to the distribution of staples. Today innovations in merchandising and new products are introduced every day, and the specialty salesman is in great demand. Staple selling and specialty selling are radically different. Specialty salesmanship requires initiative, vision, ability to create demand, a thorough knowledge of the product, and of the customer's need for it, and the persistency to pioneer in fields where there is little repeat business. Electric refrigeration demands specialty salesmen of a high type, and must bid for the services of these salesmen in a market where the demand far exceeds the supply. But wait—let us consider just what type of salesman electric refrigeration merchandising requires?

The Interview

When applicants drift in responding to a newspaper ad, there is the problem of passing judgment on each man in an interview the time of which is necessarily limited. Several factors in the man's qualifications must be determined in this interview. First, the age of the applicant. Second, his record for the past three or four years. Third, his past earnings. Fourth, his character and recommendations. Fifth, his general personality, education, and fitness for the particular work he is applying for.

The Question of Age

There will always be some controversy as to the best age for the specialty salesman. For the type of specialty selling that refrigeration calls for, the writer believes that between the ages of twenty-five and forty-five the best material will be found. The youngster must of course break in somewhere, but there are easier fields for the younger man to season himself in than in the highly competitive and specialized work of selling electric refrigeration. The results are very apt to be discouraging in the beginning, and it usually does the youngster no good to have his spirit broken by constant refusals.

As for the older man, there is no disposition on the part of the writer to put the man of past forty-five years on the shelf, but when a man of such advanced years applies for a position in a business that is new to him, one cannot help but question the record that at that age would place him in such circumstances. Usually such a man has lived long in the rut of his own ideas. His references are usually indefinite. He invariably tells you that he has accumulated a vast fund of selling experience, and has made good here, there and the other place. In short, he is not receptive to new ideas; he probably overestimates his value; his age is actually a barrier to his working with and being controlled by younger men.

A Man's Record

In interviewing an applicant for a sales position, it is always important to get a full written summary of his record. Upon glancing back over a *written* chronicle of a man's accomplishments and whereabouts of previous years, it is astonishing how clear a picture we get of the man's ability. Such a record shows up his educational qualifications, whether or not he is a drifter, whether his experience is really any qualification at all, and whether the general trend of his life is upward or downward. Such investigation in the beginning may save money in the end, for salesmen are easier to hire than to fire, and labor turnover is always costly.

Drawing Account or Commission

Too many concerns nowadays are trying to get good men without paying them anything. A good man knows his price. The type of specialty selling which electric refrigeration demands requires good men. Therefore, it is sometimes cheaper in the long run, and more productive of results, to pay good drawing accounts to men who are worth them, than to build up an organization of incompetents who are working on hopes. Commission men cannot be easily controlled; they do not absorb a sales policy; they ignore credit risks in their anxiety to close deals, and are the worst offenders in promoting rabid price competition. And one thing is certain—commission men will not work very long without remuneration. Therefore, a commission organization is always a changing one. It takes months to develop a good refrigeration salesman. A constant change of men is not productive of good results. Two good men on drawing account and commission are usually worth five on commission alone.

The Canned Sales Talk

Written sales talks which salesmen are required to learn by heart have their good points and their bad ones. The value of a canned sales talk is that it points a salesman and gives him form in selling. After he has learned good form, he may diverge from it if it suits his personality to do so. But in the beginning a prescribed sales talk, learned by heart, is not as cramping to the style of a salesman as he may contend, for the chances are that in the beginning *he has no style.*

Men From Rival Concerns

What sales manager does not, at one time or another, have his eye on certain men of other organizations who are making good. Often strenuous efforts are made to hire such men, at substantial raises in pay. Results clearly show that such men are often overestimated as to value. What a man can do with one organization is not always a criterion of what he can do with another. It is difficult for a salesman to carry his customers with him from one house to another. Usually he has to build up a new clientele.

PRESIDENTIAL AIR

Washington, D. C.—President Hoover may work in an atmosphere mechanically purified, neither too hot nor too cool, but pleasant and healthful, after he goes back to his rehabilitated executive offices.

The practicability and the cost of installing a system of modern air-conditioning equipment are being investigated by Col. U. S. Grant, III., director of public buildings and parks, who is in charge of repairing the ravages of the Christmas Eve fire in the office building.

As for men from competitive companies who seek employment with rivals of their own volition, there is always the question of why they wish to make a change. Too frequently the reason for the change is the very reason they are not desirable.

Door-to-Door Salesmen

The door-to-door salesman has usually received his experience in the hard school of book selling or some similar outgrowth of the peddling profession. He is accustomed to earning about $35.00 per week. He is too often a floater, a "day-to-day" man. He has gotten his results by stubborn and not always intelligent effort. Electric refrigeration calls for contacts with a more selected clientele, where poise and creative selling are needed. Too often such a salesman drifts on to greener pastures with a good chunk of drawing account in his pocket.

Exceptions to this are found in the aluminum ware salesman, the washing machine salesman, and the salesman of technical and medical books. These latter types are used to making more selected contacts; they are accustomed to higher earnings and larger unit sales, and their bearing usually reflects this training.

Mechanical Specialty Men

Salesmen of adding machines, slicing machines, cash registers, automatic recording instruments, computing scales, etc., fall under this classification. This type of salesman is usually accustomed to a fairly high earning power, and is a good prospect for the successful refrigeration salesman. He has been trained to be quick in perception, to absorb knowledge of his product, to think on his feet, and to close deals. The mechanical specialty salesman learns to analyze the need of his prospect before he tries to sell him. And he learns to prospect constantly for new fields of business.

Wholesale Salesmen

The wholesale hardware, electrical specialty, or building supply salesman has this drawback—his point of view is more likely wholesale than retail. He is used to repeat business, and is more of a staple salesman than a specialty salesman. A man who is used to selling from a catalog is generally at a great disadvantage in pioneer sales work.

Oil Burner Salesmen

Salesmen of oil burners are the best prospects of all for refrigeration work. They are trained in creating demand for a relatively new product. They have learned to absorb technical knowledge, and just how far to make use of this knowledge in selling the individual. They know the value of demonstration and how to make it. In short, the oil burner business is very kindred to electrical refrigeration, and oil burner men are usually successful in refrigeration.

The Ammonia Man

There is a danger of arousing the ire of a great many readers of these pages by the forthcoming statement, but it is nevertheless a fact that men experienced in ammonia refrigeration sales are more often than not unsuccessful in selling the smaller machines. The ammonia man is too technical in his point of view. He is used to selling as an engineer, and cannot leave the engineering to the service department. He thinks in terms of his own profession, and his experience has led him to underestimate the smaller machines. Usually a man with ammonia experience does not, for these reasons, blend in and work with the smaller machine companies.

Other Types

Automobile salesmen usually do not work readily into refrigeration sales. Their field of experience is too foreign. They are accustomed to selling off the floor rather than to originating a clientele. The trade-in policy has helped to make them buyers rather than sellers. And they are not accustomed to a set sales policy and do not readily work in with one.

Real estate salesmen, like automobile salesmen, are used to having their prospects brought to them. They are hard to supervise, high pressure in their methods, scattered as to ideas, and not consistent in their methods.

The life insurance salesman, however, is a good possibility for refrigeration work. He has learned in a highly competitive field to paddle his own canoe. Persistency is his essential qualification. Refusals are his daily ration. Usually he has a knack of making friends and of talking himself into business. He is trained to customer analysis. And usually he has poise and power to absorb knowledge.

Electric refrigeration is relatively new, and its markets are as yet still being explored. More than any other industry, it requires the services of expert specialty men. It is not a field of work for the salesman of staples, or for the *least resistance* man. Neither is it a successful field for the untried youngster, or for the man who has reached the decline of his years.

To Distributors

Teach your salesmen to talk Celotex Refrigerator Insulation

HERE'S a selling point that has millions of dollars in national advertising behind it. Your prospective customers have been reading about Celotex for years in magazines and newspapers.

Today nearly every man and woman knows that Celotex is successful insulation . . . appreciates its remarkable power to shut out heat.

Technical data is often too complicated to be readily understood. But when your salesmen talk Celotex insulation, people are bound to accept this point of superiority in your refrigerators. The very name Celotex has become a household word for effective insulation.

It's important that Celotex is as fine an insulation as any material on the market. But it is even *more* important to yourself and your men, that people already understand this fact . . . and welcome Celotex insulation without further discussion.

For these 4 reasons Celotex is becoming the standard insulation in many of the leading electric refrigerators

1. *Increased insulating efficiency.* The Celotex used to insulate refrigerators is a new kind of Celotex fabricated by special processes that increase its insulating efficiency to the highest possible point. It meets completely the rigid requirements of leading refrigerator manufacturers.
2. *No open joints or seams.* Celotex comes cut to fit exact specifications so that each insulated area is covered with a single board of exactly the right length, width and thickness. There can be no heat leakage at joints or seams in the insulation . . . no sagging.
3. *Sanitary and sterile.* Celotex is made from the long, tough fibres of cane and has millions of tiny sealed air cells that prevent the passage of heat. These fibres are carefully sterilized. They are clean and odorless. No other insulation is more sanitary than Celotex.
4. *Strength to reinforce the cabinet.* Electric refrigerators are subjected to constant strain due to changing room temperatures. So the great strength and rigidity of Celotex braces the walls and frame of the cabinet . . . adds to the life of the refrigerator. Yet these boards are so light that mobility is not sacrificed.

Why insulation is so important

Celotex insulation helps maintain low temperatures inside the cabinet by shutting out room heat. This is especially important in electric refrigerators. For the running time of the refrigerating unit is considerably reduced by effective insulation. Electric light bills are consequently decreased. Many repairs are eliminated and the life of the unit is lengthened.

In every sales talk there is a time when it's wise to bring the prospect onto familiar ground. That's the time to talk Celotex insulation.

Use this means to secure intelligent agreement from your listener . . . and lead from there into your closing. Celotex will help you close the sale.

THE CELOTEX COMPANY
919 North Michigan Avenue
CHICAGO, ILLINOIS
In Canada: Alexander Murray & Co., Ltd., Montreal
Mills: New Orleans, Louisiana
Branch sales offices in many principal cities
(See telephone books for addresses)
Sales distributors throughout the World

CELOTEX
BRAND
INSULATING CANE BOARD

The word
CELOTEX
(Reg. U. S. Pat. Off.)
is the trademark of and indicates
manufacture by
The Celotex Company
Chicago, Ill.

The Imitation Food Products Co.

(Branch of The Artistic Production Co.)

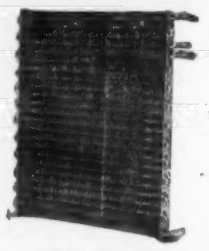
107 Lawrence Street

Brooklyn, N. Y.

Ask for our catalog of January 1, 1930. Direct sales only. "Indispensable with refrigerator display."

FLINTLOCK CONDENSERS

Full Capacity



With Every Unit

FIN AND TUBE SAME SOLID PIECE OF MATERIAL

FLINTLOCK CORPORATION

4461 W. Jefferson Ave.

DETROIT, MICH.

WHY SALES ARE LOST

RETAIL salesmen's inadequate information on the merchandise they sell was found responsible for one-fourth of the 200 losses of sales analyzed in a Mid-West store, according to the Store Salesmanship Bulletin of Dartnell Service Corporation. Salespeople were held responsible for all except 23 of the 200 lost sales, only the reasons, "Out of stock," "Condition of stock," and "Poor merchandise," not being assignable to them.

The following reasons were given for the loss of these 200 sales:

Ignorance of Merchandise	50
Indifference	30
Improper Handling of Customer	23
Errors in Address	20
Out of Stock	17
Insolence of Salespeople	12
Customer Kept Waiting	11
Impatience with Customer	10
Promise not Kept	6
Condition of Stock	5
Unfamiliarity with Stock	15
Poor Merchandise	1
Total	200

HARRELSON HEADS SALES OF FRIGIDAIRE IN SHREVEPORT

Shreveport, La.—The commercial and household sales departments of the Automatic Refrigeration Company, Frigidaire distributors, have both been placed under the supervision of M. R. Harrelson, formerly manager of household sales of the company. F. W. Stone, who was in charge of the commercial department, has been appointed supervisor of the McCollister Bros. agency at Lake Charles, La.

"It Makes the Warmth Ice Cold"

The Star Fruit and Confectionery Store

Moose Jaw, Sask.

Dear Sirs:

This summer we used a Kelvinator and kept fresh meat and vegetables in it for a week's time without it losing its freshness or diminishing its taste. Moreover, this type of electric refrigerator reduces expenses, labor of icing and time. Also, its machinery takes the warmth within the refrigerator and immediately makes it ice cold and it remains at that temperature. The daily power cost is very light compared to the natural ice refrigeration. We are therefore glad to give you this recommendation.

Commercial congratulation

Sand Star Clear Star Hemp Sugar Co.

The nineteenth day of the eighteenth year of the National Republic of China.

A Quiet Motor

Wagner Rubber-mounted Motors are supported without a metal-to-metal contact and yet shaft alignment is not disturbed. These motors are particularly adapted to domestic refrigerators and oil burners; in fact, all applications wherever quiet starting, stopping and running are desirable and absolutely rigid mounting not necessary.

Wagner, Quality

Consult Wagner, because Wagner builds every commercial type of a.c. motor.

Literature on Request

WAGNER ELECTRIC CORPORATION

6400 Plymouth Ave., St. Louis

Sales and Service in 25 Cities

PRODUCTS . . . FANS: DESK, WALL, CEILING
TRANSFORMERS: POWER, DISTRIBUTION, INSTRUMENT
MOTORS: SINGLE-PHASE, POLYPHASE, DIRECT CURRENT

61-1334-4

REDUCED RATES FOR POWER IN MARYLAND

Baltimore, Md.—Reduced rates in electricity, which should make for greater use of electrical refrigeration, appear a possibility to patrons of 13 Maryland public utility companies involved in a proposed $1,800,000 consolidation. Authority for the merger, filed by the newly-formed Maryland Light & Power Company, a subsidiary of the Empire Public Service Corporation, which operates utilities in 14 states, was asked in a petition filed with the Public Service Commission at Baltimore, Md. Benefits to consumers through economies effected by one operating company were cited in the petition. The merger of the companies will give the Empire Corporation operating utilities on the Eastern Shore, Southern Maryland and Western Maryland.

The companies proposed to be merged are the Empire Public Service Corporation, Maryland East Coast Utilities, Inc.; Betterton Ice and Electric Company, Home Electric Light Company, Antietam Electric Light and Power Company, Emmitsburg Electric Company, Midland Electric Light Company, Millington Light and Power Company, Trappe Electric Light Company, Love Point Light and Power Company, Somerset Electric Company, Suburban Electric Power Company, and the Cecilton Electric Light and Power Company.

The Empire Company is the owner of more than two-thirds of the capital stock of the Suburban, Home, Antietam, Emmitsburg and Midland utilities, as well as the owner of more than two-thirds of all classes of stock of the East Coast Utilities Company, which, in turn, owns all outstanding capital stock of the Maryland East Coast Utilities.

James W. Cryder, of Philadelphia, is the owner of all outstanding stocks of the Betterton, Somerset, Millington, Cecilton, Trappe and Love Point companies. His interests in these companies would be purchased by the Empire concern for slightly more than $500,000.

Indications are that a hearing on the petition will be called by the Public Service Commission late in January.

Floyd W. Woodcock, former executive vice-president of Day & Zimmerman, and a native of Salisbury, Md., will be president of the new company, while the directors will be composed of executive officers and Joseph A. W. Iglehart, Ezra B. Whitman, John H. Barrett and Clarence W. Miles, all of Baltimore.

GET TEST FACTS

P. T. Barnum has been credited with the idea that "There is a sucker born every minute." Refrigeration businesses founded on that theory will not get far nor continue long.

Our testing laboratory has pioneered and specialized exclusively in "Overall Performance Testing" since 1925.

GEORGE B. BRIGHT CO.

Refrigerating Engineers & Architects

2615 12th St., Detroit

KEEP HAMMERING AWAY AT THIS OBJECTIVE

HOLMES PRODUCTS, INC.
Works, 120 Helen St.
Bridgeport, Conn.

January 3, 1930.

Electric Refrigeration News,
Detroit, Michigan.

Perhaps you will remember me as one of the supporters of your publication during the early days.

I am taking this opportunity to congratulate you upon the success you have made with your publication and the service you have rendered to the industry.

I wish particularly to commend your editorial in the December 8th issue, entitled, "Development of the Art." In this editorial, you have placed your finger on the sore spot of the industry. Trust you will keep hammering away at this objective, and that your effort will be crowned with a large measure of success.

(Signed) J. F. HENDRICKSON.
General Service Manager.

TOLEDO G. E. SALES JUMP 30% IN DECEMBER

Toledo, O.—According to A. T. Emmertt, manager of retail sales of the refrigeration department of the General Electric Supply Corp., Richardson building, sales during the month of December, 1929, were 30 per cent greater than the corresponding month a year ago.

FOREIGN SHIPMENTS OF ELECTRIC REFRIGERATORS

October Exports Reported by Bureau of Foreign and Domestic Commerce

Country of Destination	Units Up To ¼ Ton Capacity No.	Value	Units Over ¼ to 1 Ton Capacity No.	Value
Austria	3	360	...	.....
Belgium	194	32,231	...	.....
Denmark	8	1,095	...	.....
France	160	23,252	...	.....
Germany	11	1,722	10	1,304
Gibraltar	1	327	...	.....
Iceland	1	100	...	.....
Italy	19	2,667	3	1,720
Netherlands	39	3,559	...	.....
Portugal	8	1,228	...	.....
Soviet Russia in Europe	53	2,320	...	.....
Spain	57	9,109	4	1,020
Sweden	41	1,711	...	.....
Switzerland	10	1,656	...	.....
United Kingdom	161	16,607	20	2,596
Canada	720	110,050	17	5,579
British Honduras	2	269	...	.....
Costa Rica	11	2,441	...	.....
Guatemala	31	5,894	...	.....
Honduras	4	532	...	.....
Nicaragua	9	1,772	...	.....
Panama	67	14,618	3	1,181
Salvador	17	3,448	...	.....
Mexico	119	22.546	6	1,152
Bermudas	17	3,030	5	1,123
Barbados	2	555	...	.....
Jamaica	1	472	...	.....
Trinidad and Tobago	2	334	...	.....
Other British West Indies	6	698	...	.....
Cuba	332	65,109	5	2,395
Dominican Republic	3	1,240	...	.....
Netherland West Indies	16	3,538	...	.....
Virgin Islands of U. S.	5	1,553	...	.....
Argentina	825	64.701	...	.....
Brazil	153	19,909	4	2,207
Chile	5	1,208	2	992
Colombia	110	20,404	2	1,418
Ecuador	22	4,516	...	.....
Peru	22	1,352	...	.....
Uruguay	85	8,554	27	4,976
Venezuela	41	5,596	5	1,160
British India	103	16,507	19	5,609
British Malaya	54	9,569	2	520
Ceylon	14	2,158	...	.....
China	45	21,719	...	.....
Java and Madura	41	7,771	...	.....
Other Netherland East Indies	5	1,245	...	.....
French Indo-China	10	2,018	...	.....
Hong Kong	...	.....	3	439
Iraq	3	650	...	.....
Japan	10	4,419	24	8,127
Palestine	10	726	...	.....
Philippine Islands	88	8,914	2	1,406
Siam	1	330	...	.....
Australia	1,108	137,188	178	33,073
British Oceania	2	412	...	.....
New Zealand	133	16,507	18	4,508
British East Africa	36	5,323	1	369
Union of South Africa	462	97,176	13	2,550
Gold Coast	2	263	...	.....
Nigeria	...	.....	18	3,251
Algeria and Tunisia	82	6,513	...	.....
Other French Africa	1	184	...	.....
Morocco	14	765	...	.....
Mozambique	18	4,004	...	.....
Total	5,645	$806.644	391	$88,675
Hawaii	146	$22,583	11	$1,512
Porto Rico	41	$6,845	1	$207

CORCORAN NAMED NEW YORK DEVELOPMENT HEAD

New York, N. Y.—J. A. Corcoran has been appointed director of development of the Electrical Association of New York. The Association is the result of a merger of the Electrical Board of Trade of New York and the New York Electrical League, which was effected for the purpose of carrying on a continuous program of co-operative market development activities in the metropolitan area.

Mr. Corcoran was formerly advertising manager of Kelvinator Corp., and more recently held the position of manager of the New York branch.

SHANNON TO PRESIDE AT PARIS MEETING

Dayton, Ohio—L. C. Shannon, foreign manager of Frigidaire Corp., sailed from New York, Saturday, Jan. 4, for Europe, where he will preside at a meeting of European Frigidaire distributors, to be held in Paris, Jan. 20-21. This meeting will be attended by representatives from practically every country in Europe, and plans will be made for marketing Frigidaire equipment on the continent during 1930.

Mr. Shannon will visit Frigidaire branches in London, Paris, Berlin and Milan during his European stay. He expects to return to this country during the latter part of February.

APPOINTED ICE-O-MATIC DISTRIBUTOR

Springfield, Mass.—J. G. Riga & Sons Co. has been appointed western Massachusetts distributor for Williams Ice-O-Matic refrigerators.

French Cruiser Acquires American Refrigeration

WHEN the French government training cruiser Edgar Quinet visited San Francisco last year a Frigidaire 200 lb. ice maker cabinet and compressor were installed in the officers' mess, which had been previously handicapped by lack of suitable cold storage equipment. In the past it has been very difficult to keep fresh meat and perishables when cruising in the tropics, and the refrigeration facilities are greatly appreciated by the officers. The equipment was installed by the San Francisco branch of the Frigidaire company and is said to be the first electric refrigeration unit installed on a French government vessel.

POOLING PATENTS

MORE than 1,700 patents are now cross-licensed by automobile manufacturers in the National Automobile Chamber of Commerce through the second five-year extension of the co-operative plan, which became operative on January 1, 1930.

Automobile manufacturers have believed that each was the gainer if he contributed his own patents and in return received rights under the patents of the remainder of the industry. This agreement has operated so successfully that the automobile industry has been free from patent litigation for the 15 years.

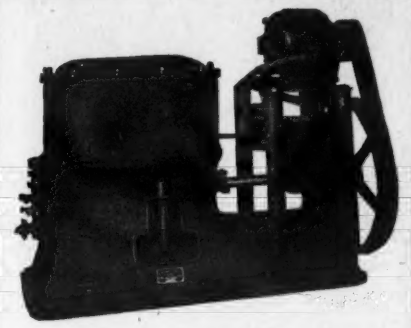
This plan was originally for a ten-year period, with a renewal in 1925. In the first agreement each manufacturer contributed the development patents which he owned, and was licensed under the patents controlled by members who did likewise. With the exception of the five-year period, only those patents held at the renewal period were included, any later acquired patents remaining the exclusive property of the member. This second extension will include all patents owned by members signing up. Since 1925 about 900 patents have been issued and are included in the agreement for the first time, making a total of 1,600 patents.

Design patents and those applicable only to motor trucks, fire engines and tractors are not included in the agreement.

TO MANUFACTURERS OF ELECTRIC AND GAS UNITS

If you want CABINETS as you want them let PUFFER-HUBBARD build them. We work to specification.

Puffer-Hubbard Mfg. Co.
MINNEAPOLIS, MINN.



Electric Refrigeration Distributors and Dealers

You need the PEERLESS line of compressors.

PEERLESS units give you a COMPLETE line, ranging from one to ten tons.

PEERLESS Perfected Multiple Apartment System is recognized leader in its field. Full details given on request. Our record warrants your most exacting investigation.

PEERLESS ICE MACHINE CO.
515 W. 35th St.
CHICAGO, ILLINOIS

E.T.L. Service for Domestic and Commercial Electric Refrigeration

Testing and experimental laboratory service for Manufacturer, Distributor, Central Station—Test data exclusive property of client.

ELECTRICAL TESTING LABORATORIES
80th Street and East End Avenue, NEW YORK CITY, N. Y.

DUNN ADVOCATES MORE 50 DEGREE EDUCATION

Cleveland, Ohio—Results of the National Food Preservation Program seem to justify a continuance of the movement for educating the public to the importance of proper refrigeration, according to C. L. Dunn, chairman of the N. E. L. A. Refrigeration Committee. The question will be discussed at a meeting of the various N. E. L. A. Merchandising Bureau Committees, which will be held at the Tutwiler Hotel, Birmingham, Ala., January 20 and 21.

"There is no question," says Mr. Dunn, "but that the results accruing from the second year of such an activity will be far more beneficial than the first. We are convinced that the idea of 50 degrees as the safety point for food temperature can be developed to a greater extent. Last year the Committee's work was handicapped on account of the limited time between the final decision to start the program and the date of the Essay Contest. The Advertising Committee is prepared to present a suggested program for the coming season at the Birmingham meeting."

Unfortunately, owing to a recent death in the family of Mr. Dunn, he will be unable to attend the Birmingham meeting, but has indicated that he will call a meeting early in February at some convenient place, for the purpose of completing the ideas and suggestions of the members in attendance at Birmingham.

TOLEDO FRIGIDAIRE PLANS 1930 SALES CAMPAIGN

Toledo, Ohio—Sales supervisors of E. H. Walker Co., local Frigidaire distributors, met in the Commodore Perry Hotel January 3-4, to discuss the business outlook and sales campaign for 1930.

E. H. Walker, president; O. W. Gleason, sales manager; A. C. Hunt, assistant general manager, and A. W. Taylor, sales promotion manager, thanked the men for their splendid work of the past year. Mr. Walker said that the close and continued contact between company officials and its sales supervisors had proved educational, inspirational and profitable.

Mr. Walker resigned as distributor of Delco-Light products January 1, which position he formerly held in conjunction with the Frigidaire franchise, in order to concentrate solely on Frigidaire sales.

BOSTON PLUMBERS NAMED DEALERS FOR WELSBACH

Boston, Mass.—F. W. Webb Mfg. Co., 50 Elm St., Welsbach distributors in the local metropolitan area, has recently appointed more than 50 plumbers as Welsbach dealers, and plans to co-operate with them in a direct mail campaign, which opens today, Jan. 15.

A series of three letters will be mailed to each prospect that the dealers submit, and follow-up contact will be made by the dealer and a Webb salesman.

FROZENAIRE PRODUCTS CORP. ORGANIZED

Albany, N. Y.—National Frozenaire Products Corp., New York City, has been organized to manufacture refrigerators. William Johnson Maginnis, Louis Podelsky and Jack Berkowitz, 113 West 42nd St., New York City, are directors.

O. H. CASTLE RETURNS FROM EXTENDED TRIP

Indianapolis, Ind.—O. H. Castle, president of the Castle Refrigerating Machine Co., has returned from a three months' vacation on the west coast. He came back via the Panama Canal, Havana and New York City.

KING ZEERO
SAFETY COOLING UNITS
EVAPORATORS
for Single or Multiple, Methyl or Sulphur
Over 3,000 in operation in Chicago, ranging from 1 to 106 per compressor
BRINE
CIRCULATION UNITS, *All Steel*
Tested 125 lbs. air pressure
MORRISON MFG. CO.
2315 Wolfram St., CHICAGO, ILL.

This Practical Insulation in SEALED SLABS

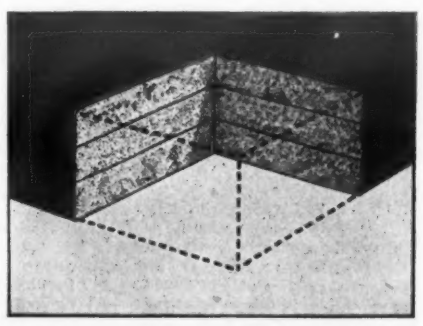
...easy to install... fits snug!

TO high insulating efficiency, Balsam-Wool Sealed Slabs for mechanical refrigerators, now add the ease of handling, *plus* the combined desirable qualities of both rigid and flexible insulation.

Made to any dimensions—length, breadth, thickness—Balsam-Wool Sealed Slabs, semi-rigid, hermetically sealed, fit exactly into place. Flexible enough to fit snugly, rigid enough for easy handling.

Balsam-Wool Sealed Slabs are light weight, water-proof, labor saving, economical, permanent—the ideal, true insulation. Notice the illustration at left showing the construction of Balsam-Wool Sealed Slabs.

Let us send you one of the *perfected* Balsam-Wool Sealed Slabs FREE. And, if you desire, our engineers will gladly aid you in planning efficient refrigerators.



The average thermal conductivity of Balsam-Wool does not exceed 6.0 B. t. u. per square foot, per one inch thickness, per 24 hours, per one degree Fahrenheit difference in temperature. The illustration shows the construction of Balsam-Wool Sealed Slabs

A guaranteed Weyerhaeuser product

WOOD CONVERSION COMPANY
Mills at Cloquet, Minnesota

Industrial Sales Offices: 360 N. Michigan Avenue, Chicago
3107 Chanin Bldg., New York 3084 West Grand Blvd., Detroit

Manufacturers of Balsam-Wool Insulation for Domestic Refrigerators, Motor Buses and Airplanes; Balsam-Wool Refrigerator Car Insulation and Steel Passenger Car Insulation; Balsam-Wool Standard Building Insulation

precision built **Motor, Transmission Eccentric and Crank Shafts**

We specialize in small SHAFTS made to your specifications. Workmanship absolutely guaranteed.

Send us your blue prints and we will send you our prices.

Modern Machine Works, Inc.
196 Milwaukee St. MILWAUKEE, WIS.

These are the Men Who Carried General Electric

Above
H. C. Mealey
Assistant
to
Manager

Left
W. J. Daily
Manager
of
Sales Promotion
Division

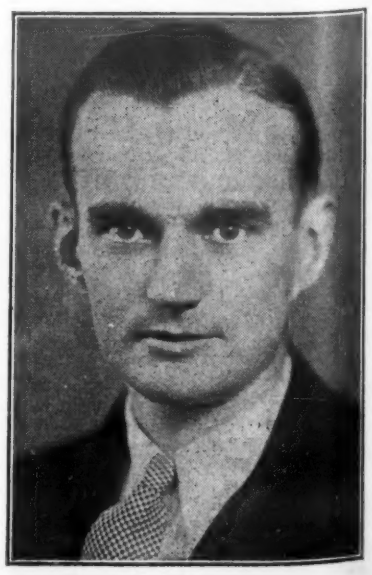
Above
P. B. Zimmerman
Sales
Manager

Left
H. H. Bosworth
Manager
of
Central Station
Division

Left
W. M. Timmerman
Commercial
Engineer

Above
M. F. Mahony
Assistant
to
Manager

Left
H. P. Smith
Auditor



Below
L. R. Edwards
Advertising
Manager

For Automatic Refrigeration Manufacturers

Whatever you require in copper, brass, bronze, or copper alloys, we are prepared to furnish on contract either parts or sub-assemblies ready for installation in your unit. Boilers, compression nuts, filters, floatballs, condensers, special nipples, bellows and thermostats, and a large variety of other standard parts.
Let us quote on your requirements.

BRIDGEPORT BRASS CO.

General Offices and Plant
Bridgeport, Conn.
Offices in Principal Cities

"Bridgeport" BRASS TRADE MARK CO.

NEW IDEA IN ADVERTISING

A STUDIO kitchen designed to render a two-fold service to food manufacturers, advertising agencies, and those particularly interested in food accounts is an advertising innovation reported from the Middle West. The art department is said to render a complete art service, not only on food accounts, but for every type of advertising.
of advertising.

The kitchen, under the supervision of home economics experts, is reported to have every facility for the testing of recipes and the creation of new uses of all foodstuffs. It is possible for copy writers for food accounts to have their recipes tried out, tested for taste and appearance, and sketched and photographed in the laboratory kitchen. — *Domestic Commerce.*

"It was built by BOHN"

The handy base cabinet may either be used for refrigerating machinery or the storage of cooking utensils, canned goods, vegetables, etc.

The name BOHN is our warranty that the finest materials obtainable have been utilized by skilled craftsmen and refrigeration engineers to build for you this beautiful and scientific product—an all-porcelain BOHN refrigerator.

BOHN installations include many of the leading hotels, restaurants and hospitals in America.

BOHN refrigerators are used exclusively on all Pullman-built railway dining and buffet cars.

The United States War Department has purchased hundreds of all-porcelain BOHN refrigerators for our army barracks and battleships.

In choosing BOHN refrigerators, discriminating home owners throughout the country have given BOHN a representative list of which any manufacturer might be proud.

Write for details of the remarkably low prices that are now prevailing.

BOHN REFRIGERATOR COMPANY
SAINT PAUL, MINNESOTA

GEORGIA UTILITIES MAKE GOOD SALES RECORDS

GENERAL ELECTRIC COMPANY
Electric Refrigeration Dept.
Cleveland, Ohio
January 8, 1930.

Electric Refrigeration News,
Detroit, Michigan.

On page 2 of the December 18 issue of ELECTRIC REFRIGERATION NEWS, the top left-hand corner contains a statement that the Georgia Power & Light Company sold only 250 electric ranges and refrigerators during 1929.

This is obviously an error, and perhaps you should have it corrected, since we understand this company sold 2,800 General Electric refrigerators during their spring and fall campaigns, and expected to sell 3,200 for the entire year of 1929.

The significant fact which should be stressed is that 3,200 machines is equivalent to 3.6% of the 89,400 meters on this system.

W. J. DAILY, Manager,
Sales Promotion Division.

Answer—The article referred to listed sales during the first ten months of 1929 by subsidiaries of the National Electric Power Company of New York City. The Georgia Power & Light Company, referred to in the report, is at Valdosta, Ga., and is not the same as the Georgia Power Company of Atlanta.—Editor.

PRENTICE AND PRIETSCH AT NORTHWEST MEETING

Seattle, Wash.—Gordon Prentice, president, and Paul R. Prietsch, general manager, of Gordon Prentice, Inc., were among Pacific Northwest representatives at the regional meeting held in Los Angeles, Calif., Jan. 2-3-4.

SPRINGFIELD KELVINATOR SIGNS UP UTILITY OUTLETS

Springfield, Mass.—Springfield Kelvinator Sales, Inc., has signed up the Massachusetts Lighting Companies, with their 26 stores in eastern and central Masachusetts, as a sales outlet for Kelvinator. Refrigerators are being put on display in Athol, Orange, Leominster and other cities and towns in their territory. Most of these local agencies will come under the supervision of Springfield Kelvinator Sales, but those in the extreme eastern area will be looked after by the Boston Kelvinator branch.

Other new dealers include Royal Steam Heater Co. of Gardner, John C. Woodlock of Greenfield, Houston & Moffet of Monson, D. S. Lewis of Palmer, and Casson & Bartlett of Springfield, all of Massachusetts.

to the Fore in the Electric Refrigeration Field

Above
T. K. Quinn
Manager

Right
A. C. Mayer
Manager
of
Merchandising
Service Division

Above
A. M. Sweeney
Assistant
to
Manager

Right
W. E. Landmesser
Manager
of
Commercial
Division

Above
J. J. Donovan
Manager
Apartment House
Division

Right
C. G. Smith
Manager
Credit and
Financial
Division

Right
G. C. Wasson
Manager
Warehouse and
Distribution
Division

Below
W. C. Noll
Manager
Product
Division

G. E. ORDERS UP 28% IN 1929

Schenectady, N. Y.—Orders for all classes of electrical products received by the General Electric Company during the year 1929 amounted to $445,802,519, compared with $348,848,512 for 1928, an increase of 28 per cent, Gerard Swope, president, has announced.

The orders for the fourth quarter of 1929 amounted to $108,398,049, compared with $88,162,049 for the last quarter of 1928, an increase of 23 per cent.

SPRINGFIELD ELECTROLUX OPENS NEW SHOW ROOM

Springfield, Mass. — Springfield Gas Light Co., Electrolux dealer, opened a new showroom in the Hotel Charles, corner of Main and Liberty Sts., Wednesday, Jan. 15. The display room, which has large windows and an entrance on both streets, is finished in Spanish style.

FREEZE FASTER AND SAVE SUGAR

Bloomington, Ill.—Save on sugar, freeze faster, and get the best homemade ice cream. Sugar lowers the freezing point. Fast freezing makes smaller, more delicate crystals in the finished dessert, according to the Williams Ice-O-Matic Laboratories.

"Keep sugar in frozen desserts at the lowest possible level and you make it easy to freeze the ice cream, ice or mousse in much less time," say the Laboratories. "Add desired sweetness by pouring a flavored syrup or fruit over the dessert. Ice-O-Matic freezing of dishes makes it easy to prepare dessert without stirring. For this purpose heavy cream is the most satisfactory base. But it is expensive and too rich to be palatable if used by itself, so economy can be practiced by diluting with milk and thickening the mixture with gelatin, cornstarch or eggs, and adding a well-beaten egg white to obtain fluffiness and lightness. Freezing faster makes smaller crystals and, therefore, smoother, better ice cream, so one should freeze with the refrigerating machine adjusted to a specially low degree, if possible."

FRIGIDAIRE EQUIPS PACIFIC COAST LIGHTSHIPS

Portland, Ore.—When Lightship No. 113 was launched last summer it was pronounced by government officials and others interested in shipping to be one of the most modern of its kind.

No. 113, as well as her two sister ships, No. 100 and No. 114, are Diesel-electric powered, the first to be built for the government with this type of combined Diesel motor and electrical propulsion. In fact, every new feature possible was included in the equipment of these trim little vessels. Naturally, one of these would have electric refrigeration.

C. E. Brown, salesman for the Frigidaire Corporation of Portland, landed the contract, the figure being $1,050 for each ship. A one-horsepower, C compressor cools the four coils leading to the different compartments.

TOLEDO - COPELAND INCREASES SALES PERSONNEL

Toledo, Ohio—Harry Manore, manager of Toledo-Copeland Electric Refrigerator Sales and Service, 325 N. Erie St., has added six men to the retail sales force. The newcomers went right to work and when the Copeland Sales Convention was held in Detroit on January 13 and 14 they were full-fledged Copeland salesmen and accompanied Mr. Manore and the rest of the sales staff.

RECO ELECTRIC MILK COOLING
"The Boiler Plate Cabinet"
DOMESTIC UTILITIES
Division of the Refrigeration Corp. of Maryland
ARLINGTON, BALTIMORE, MD.

WELCOME to NEW YORK and
The HOTEL GOVERNOR CLINTON
31ST ST. AND 7TH AVE.
opposite PENNA. R.R. STATION
1200 Rooms each with Bath and Servidor
ERNEST G. KILL
Gen. Mgr.
ROOM AND BATH · 3.00 UP

Faster, safer deliveries with WEBB Slingabout
REGISTERED U. S. PATENT OFFICE

Up the steps in jig-time goes the refrigerator delivered in a WEBB *Slingabout*. The strong webbing sling, reinforced with sole leather, offers convenient hand-holes on every side.

Safety to the refrigerator and to the walls and woodwork of your customer's house is assured by this thickly padded, flannel-lined canvas jacket.

Cleaner, quicker deliveries mean greater profit for you. WEBB *Slingabouts* are tailored to fit every mechanical refrigerator. Tell us what line you handle and we will gladly quote prices.

CHARLES J. WEBB & COMPANY
116 CHESTNUT ST. PHILADELPHIA, PA.

FITTINGS -- TUBING
Largest Stock in the East
DOMESTIC UTILITIES
Division of the Refrigeration Corp. of Maryland
ARLINGTON, BALTIMORE, MD.

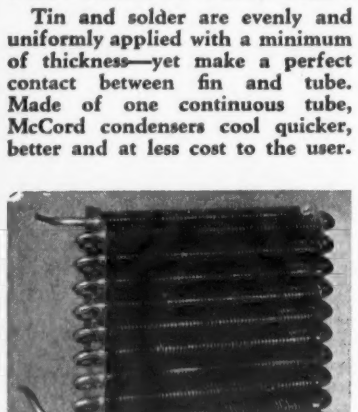
McCord BUILT CONDENSERS

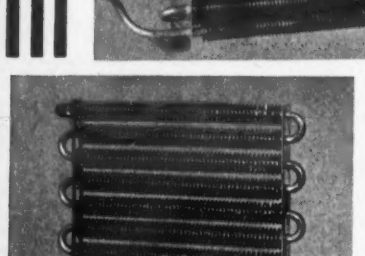
Efficient

McCord condensers have always proved highly efficient under any and all conditions. Their use as standard equipment on such well known refrigerators as Westinghouse, Kelvinator and Copeland, tells a story of dependability and satisfaction that is hard to equal.

Perfect Metallic Bond Between Fin and Tube

Tin and solder are evenly and uniformly applied with a minimum of thickness—yet make a perfect contact between fin and tube. Made of one continuous tube, McCord condensers cool quicker, better and at less cost to the user.





Standardized Models

McCord has standardized on a few models covering the majority of condenser requirements. McCord offers the facilities of their condenser engineering department in the designing of practical and efficient condensers. A new catalog containing valuable charts and engineering information free on request.

McCORD RADIATOR & MFG. Co.
DETROIT MICH.

Train Works Overtime as Hotel

Twenty-five below and everybody smiling when a photographer snapped this observation car group on the rear of a Northern Pacific special train at Cloquet, Minn. They are members of the Industrial Sales Department of the Wood Conversion Company, manufacturers of Balsam-Wool sealed slab insulation, leaving Cloquet at the conclusion of the company's annual sales convention.

Approximately 150 executives and district representatives from the Atlantic Coast, the Great Lakes Region and the Pacific Coast attended the meeting, December 16-19. During these four days, five Pullmans, two observation cars and two diners served as their hotel.

(Left to right)—O. J. Stevens of San Francisco; C. M. Lee of Detroit; A. D. Bowman of New York; A. H. Purdom, H. W. Hintze and D. H. Corlette of Chicago; W. A. Wadsworth of New York; and F. C. Vandervort, Jr., of Chicago.

The Filtrine Filter assures pure, clear water from your ELECTRIC Water Cooler
WRITE FOR DETAILS
FILTRINE MANUFACTURING COMPANY
49 LEXINGTON AVE. Brooklyn, N.Y.
Manufacturers of FILTERS & COOLERS of all sizes.

BUYING HABITS OF FEDERAL EMPLOYEES

A RECENT survey covering the families of 506 federal employees, showed that 41.5 per cent of the families canvassed were buying one or more articles on the installment plan.

The Bureau of Labor Statistics which conducted this survey reports that installment purchasing seems to be a matter of inclination rather than income. Dividing the families covered into income class groups showed that there was little relationship between incomes and installment buying. Of those families coming in the income group from $1,500 to $1,800 a year, 51.7 per cent were making installment purchases. In the group from $2,700 to $3,000 a year, the next largest figure of 50 per cent was found. The two highest income groups were the two that showed the lowest percentages of those buying on installment.

Furniture and house furnishings showed the largest percentage of installment purchases of any one group of commodities. There were 137 families buying one or more of these commodities on installment purchases, paying an average cost of $250.53 for their goods. These 137 families represent 27 per cent of the total number of families and 65.3 per cent of the number of families reporting any installment buying. Of these 137 families, 59 had carried over a debt from the preceding year, and 102 still owed money at the close of the year.

The next commodity classifications in order of their importance were as follows: Clothing had 28 families paying regular installments; radios, 25 families; automobiles, 21; stoves, 16; washing machines, 15; musical instruments, 12; sewing machines, 12; vacuum cleaners, 12; coal, 4; books, 2; tires, 2; jewelry, 2; electric refrigerators, 2; awnings, 2; furnaces, 2, and miscellaneous, 3.

In summarizing the result of the survey, the fact is shown that 162 families of the 210 that were purchasing commodities on an installment basis still owed money at the end of the year, and the average amount of their debt was $164.93.—*Trends and Indications.*

SUBSTANTIAL GAIN IN EXPORT VALUES

EXPORT values of electric refrigeration units up to 1-ton capacity during 1929 will exceed by a wide margin the total combined export values of the same commodity during the years 1927 and 1928. For the first ten months of 1929 (January to October, inclusive) export figures show shipments of 63,777 units, with a total value of $10,637,806.00.

During the year 1927, 22,588 machines, with values totaling $3,684,179.00, were shipped to foreign countries, while in 1928, exports of 35,712 units aggregated a total of $6,469,179.00. The combined values of exports during these two years reaches $10,154,160.00, or $483,644 less than the shipments reported during the first ten months during 1929.

Since 1927, values of shipments have shown a gain of about 40 per cent over the preceding year. In 1928, export sales made a gain of slightly more than 43 per cent, while in 1929 an increase of 39.18 per cent. The figures for the three years are as follows:

Year	No. of units	Value
1927	22,588	$ 3,684,981
1928	35,712	6,469,179
1929 (Jan. to Oct., incl.)	63,777	10,637,806
Total	122,077	$20,791.966

SHREVEPORT DEALER SOLD OVER 500 UNITS IN 1929

Shreveport, La.—Although the Automatic Refrigeration Co., Shreveport agents for Frigidaire, sold more than twice the volume of units in 1929 as in 1928, another doubling of volume is anticipated in 1930, judging from the present outlook, according to M. R. Harrelson, sales manager.

The local agency sold more than 400 household units and 131 commercial units during the period of 1929, when it was in operation. It begun business under the present management only in March. As a result of this accomplishment the sales quota of the organization has been doubled.

Included in the installations were twelve individual units for the R. A. Gibson apartment at Centenary Boulevard and Kings Highway, and a complete commercial refrigeration system for the Libby Glass Company factory in Shreveport, the latter installation having a total valuation of $7,800.

The Christmas premium campaign conducted by the company resulted in a total of 41 household units being sold.

The plan was to give to each Frigidaire purchaser an ice bowl and tongs or a silver dessert service. This plan resulted in scoring 140 per cent of the sales quota for December.

FERRO-ENAMEL MEN AT SALES CONVENTION

Cleveland, Ohio—The annual sales convention of the Ferro Enamel Supply Co. was held December 16-19, 1929. Meetings were held one day in laboratories and plant of the company, and on succeeding days at the sales offices in the B. F. Keith Bldg.

Moving pictures of various jobs built by the Ferro company were shown, and talks were given to the group by R. L. Cawood, president, Patterson Foundry & Machine Company, E. Liverpool, O.; H. R. Orwick, Corundite Refractories; Dr. R. R. Shively, B. F. Drakenfeld Co., and other. A banquet was held on the evening of the final day, at which "Sailing Ed McConnell," WTAM radio star, entertained. Sixty-five men were in attendance.

CLUBROOM PROMOTES REFRIGERATOR SALES TO BROOKLYN WOMEN

Brooklyn, N. Y.—Across from the Loeser department store, in the heart of the shopping district of Brooklyn, there is a Rex Cole, Inc., showroom with a most interesting electric kitchen and auditorium which is used as a home demonstration center for the women of Brooklyn and which has proved a successful factor in the merchandising of electric refrigerators to the public. There is a modernistically decorated room done in black and vivid shades of orange, and furnished with tables and chairs to accommodate card parties or club meetings of fifty or sixty women.

Mrs. L. G. Goettler is in charge of this center, acting as hostess and demonstrator at the meetings, and making the personal contacts necessary to keep the schedule filled. She has an assistant who helps in this work and occasionally gives demonstrations of ice box cooking at some of the other Rex Cole showrooms, but they have discovered that the women living in the suburbs or the farther out residential sections prefer to come into the shopping district for their meetings, as it gives an opportunity to do some shopping at the same time. Brooklyn is a fertile field for this sort of publicity work, as it is primarily a home city and is full of flourishing churches which have all sorts of women's clubs and groups affiliated with them. Mothers' clubs, study clubs, bridge clubs and social clubs have all been solicited to use the General Electric center for their meetings and have responded in a most gratifying manner. If they want to raise money for club work or for charity, they are permitted to sell tickets to outsiders for these occasions, and in this way can raise a considerable sum of money with very little trouble or work.

The advertising of this center is all done by personal contact with the heads of the clubs or churches, and by word-of-mouth from club to club. The work begins about the middle or last of September and continues until the middle of June. During the summer months, the clubs hold no meetings, but during the winter they are very active in Brooklyn. Mrs. Goettler acts as hostess at these affairs, seeing to the seating arrangements, and distributing General Electric playing and score cards when it is to be a bridge party. In return, each guest is asked to fill out for her a card, giving her name, her address, information as to whether or not she owns an electric refrigerator, its make, if she does, and whether she would like information about G-E refrigerators. These cards are later given to the salesmen as "prospect" cards and have proved to be effective and simple means to get names of new sales prospects. The women are in a non-commercial atmosphere when they are asked for this information and do not object to giving it to their hostess. After the club meeting is finished, or the game of bridge is over, Mrs. Goettler serves the electrically refrigerated refreshments, such as frozen fruit salad, with tea and sandwiches or ices and little cakes. At holiday times, she arranges special decorations for the room and little extras in the way of seasonal refreshments. Just before the refreshments are served, she gives an actual demonstration of how the particular salad or desert is made, describing the ingredients and the proper method of mixing and freezing it, so that the audience can get a clear idea of how they themselves can make it for their own families. Cards giving various ice box recipes are passed around, including the recipe of the dish served that day. These are reprinted from the Alice Bradley electric refrigerator cookbook, prepared especially for the General Electric Company.

WALKER EMPLOYEES RECEIVE $1,175 IN BONUS CHECKS

Toledo, Ohio—Twenty-four employees of the E. H. Walker Co., Frigidaire distributor, were guests of Mr. Walker at a party recently. Bonus checks totaling $1,175 were presented to the office workers. Short speeches were made by Mr. Walker, A. C. Hunt, O. W. Gleason and A. V. Stout. A. W. Taylor was toastmaster.

SAYRE AND SEIBERT OFF ON WESTERN TOUR

Detroit, Mich.—J. S. Sayre, general sales manager, and E. A. Seibert, service manager, of Kelvinator Corp, left a few days ago for a trip through the West.

Their itinerary includes Denver, Seattle and San Francisco. They will travel via the air route over some portions of their tour.

KEROTEST *forged brass* MANIFOLDS

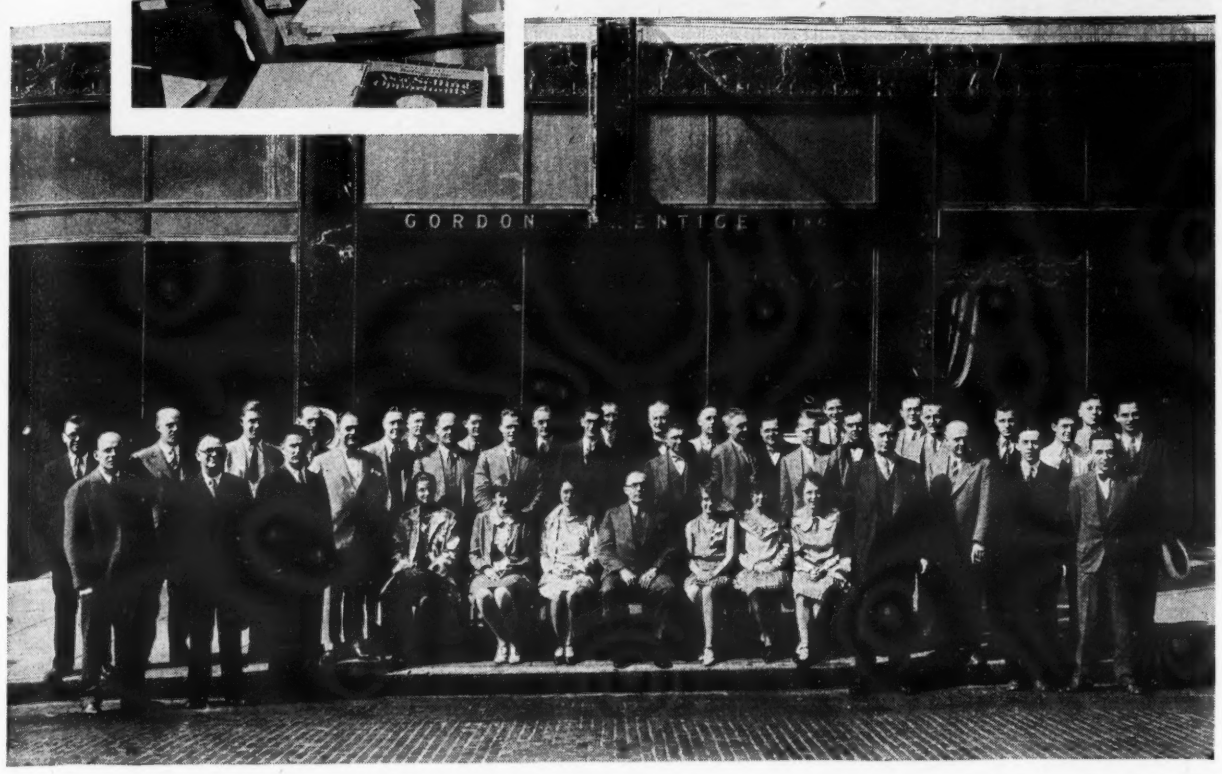
A difficult problem for the service manager has been solved with this Kerotest seamless type of Manifold equipped with Angle Valves permanently screwed and soldered 2 inches between centers as illustrated.

These square end tubes can be obtained in 2, 3, 4, 5, 6, 10 and 30 valve lengths, tapped on the ends for ⅜-inch pipe. Valves fitted with Wing Nut Seal Caps, or Packless Valves if you prefer.

Detailed specifications and quotations sent upon request.

KEROTEST MANUFACTURING CO. · PITTSBURGH, PA.

They Sell G. E. Refrigerators in Seattle



(Upper left)—Paul R. Prietsch, general manager, Gordon Prentice, Inc., Seattle, Wash., which, though organized only last March, has already climbed to a prominent place among leading General Electric Refrigerator distributors throughout the country. (Upper right)—Salesmen's Institute, with E. L. Collins, manager educational work, in charge. (Bottom)—Sales and office staff of Gordon Prentice, Inc., in front of company offices.

PROFITABLE MARKET OPEN IN TOWNS OF 10,000 TO 25,000 POPULATION

A TABULATION made from reports of 6,031 radio dealers shows that 29.24 per cent of the purchasers of radio sets are made in towns of 25,000 population and under, and, to carry the analysis still further, 21.50 per cent came from towns of 10,000 population and under. The Department of Commerce which reports these figures goes on to say that the average value per set sold in these towns of 10,000 population and under amounted to $154.50, as compared to an average for the United States as a whole of $164.00.

The table given below gives the complete recapitulation of this survey made by the United States Department of Commerce:

Cities Having a Population of:	*Percentage Business of Total*	*Sales, Second Quarter, 1929 No. of Sets Sold Battery*	*A-C*	*Volume of Business*	*Average Sales Per Dealer*	*Value Per Set Sold*
Less than 10,000	21.50	2,748	16,983	$ 3,043,722	$810	$154.50
10,000 to 15,000	2.84	182	2,137	402,635	1,825	173.50
15,000 to 25,000	4.90	309	4,089	695,586	2,135	158.00
25,000 to 35,000	3.39	198	2,709	479,775	2,790	165.00
35,000 to 50,000	3.50	152	2,766	497,001	3,110	170.00
50,000 to 75,000	4.80	291	3,808	680,416	3,450	166.00
75,000 to 100,000	2.72	180	2,426	385,377	4,100	148.00
100,000 to 150,000	5.27	215	4,346	746,376	4,500	164.00
150,000 to 200,000	4.42	159	3,849	626,435	5,146	156.50
200,000 to 300,000	5.66	152	5,046	802,476	6,580	154.50
300,000 to 400,000	2.34	71	1,916	331,880	4,310	167.00
400,000 to 500,000	5.58	144	4,604	790,776	8,800	166.50
500,000 to 750,000	5.50	189	4,220	777,696	7,260	176.50
750,000 to 1,000,000	7.55	227	6,405	1,069,959	7,380	161.50
1,000,000 to 1,500,000	1.82	32	1,657	267,896	6,620	158.50
1,500,000 to 2,000,000	1.76	52	1,441	248,925	4,530	167.00
2,000,000 to 2,500,000	...	....	....	.....	....	.....
2,500,000 to 3,000,000	9.75	230	6,463	1,382,520	16,100	206.00
3,000,000 and over	6.70	304	5,654	943,239	10,450	158.50
Total	100.00	5,835	80,519	$14,172,740	$ 2,350	$164.00

HIGH COSTS OF HANDLING RETURNED MERCHANDISE

In a single month, there were 14,942 returns of merchandise in a typical department store in the medium range of sales volume, according to the Bureau of Business Research of Ohio State University.

The cost of these returns to the store was $5,834.32, representing approximately one-half of one per cent of total net sales for the month, while in number of sales the returns amounted to 3.03 per cent of the net sales transactions for the month.

Figuring direct cost only, the average expense to the store for these returned goods ranged from a low of 31.8 cents to a high of 61.6 cents, depending upon the various service functions that were affected by the return.

The Bureau also estimates the cost of a straight sale in four classifications in the store studied. For a cash and carry sale, the average cost is 16.1 cents; for a cash and send sale, it is 26.2 cents; for a charge and take sale, the average cost is 17.9 cents, and for a charge and send sale, it is 28.0 cents.—*Trends and Indications.*

WHY ARE YOU BIASED?

I would like to see more news about Frigidaire. Why do you give so much space to other makes? Why are you biased?—W. E. Jensen, 1646 High, Denver, Colo.

REFRIGERATION RUBBER WARE

Specializing in the development and manufacture of hard and soft rubber parts for electric refrigeration.

THE AETNA RUBBER CO.
ASHTABULA, OHIO

MANUFACTURERS OF
Sheet Metal Parts
To Your Specifications

Bases, Angle Iron to support units.
Guards—to enclose units.
For Household Refrigerators we make outside steel panels, food compartments, etc.
Ice Cream cabinets and parts.

MOTORS METAL MFG CO.
5936 Milford St. - Detroit, Mich.

SUPER AUTOMATIC OIL HEATOR

The Haberdasher

who sells you a collar without showing his neckties is satisfying himself with one profit instead of two.

Why not earn two profits in your business by installing SUPER Automatic Oil Heators in your refrigerator off seasons?

THE SUPER OIL HEATOR CO.
PAWTUCKET, RHODE ISLAND

FORGED BRASS FITTINGS
For Automatic Refrigeration

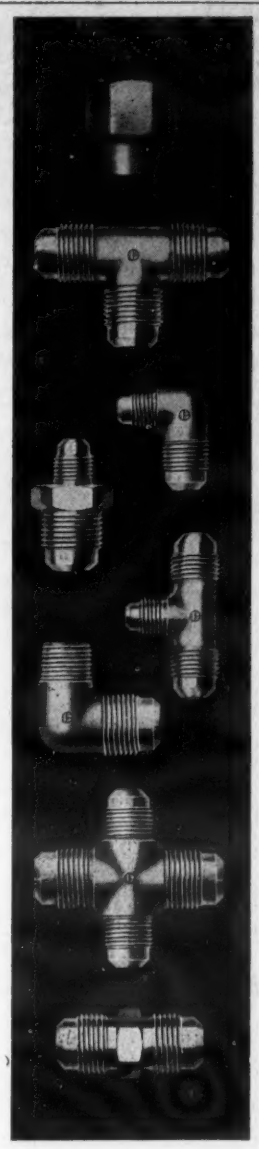
"Built Right -- to Stay Tight"

Commonwealth fittings are especially designed to meet the exacting requirements of the Automatic Refrigeration Industry. Compact grain structure and great tensile strength are obtained by the use exclusively of brass forgings, and rod. Commonwealth fittings are machined to unusually close limits; threads are accurate and uniform; seats are perfect; tight, seepage-proof connections are assured for the life of the installation.

All standard sizes—and many special sizes with almost any combination of pipe and tube ends—are in stock for immediate shipment. Each fitting is individually wrapped to insure against marring.

Send for Catalog No. 36

COMMONWEALTH BRASS CORPORATION
Commonwealth and G. T. R. R.
DETROIT, MICH.



This is a National Message to the American Housewife

Good Housekeeping Institute

Recommends Proper arrangement of foods in your refrigerator, and KVP advises the use of Proper Papers for food wrapping and protection. There is a big difference—to get the most good out of your refrigerator are you using both KVP Refrigerator Papers?
There's Household Parchment for cooking and for wrapping all greasy, moist and wet foods—it's boil-proof—it wears—use it again and again. KVP Heavy Waxed Paper "Curter Box" seals tight (one sheet will do)—keeps the moisture in or keeps the moisture out as desired. Remember, all foods should not be wrapped in Waxed Paper—for 100% results use the famous pair of KVP food wrapping and cooking papers.

Try your Grocer, Stationer, Hardware, Department Store and Naborhood Merchant first; if they cannot serve you, KVP will pay the parcel post.

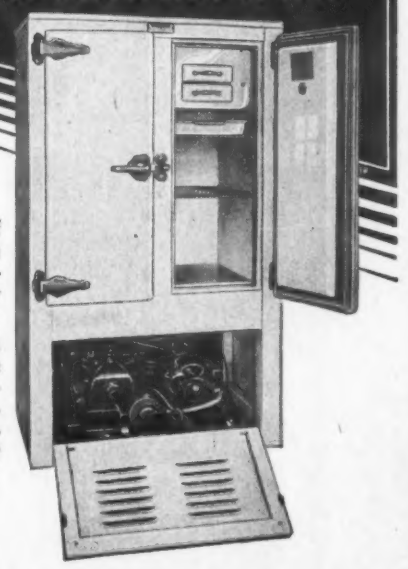
Send $1.00 for the two big 50c rolls (West of Missouri and South Coast States, 60c per roll, both for $1.20 postpaid).

FREE When ordering, mention this ad for a Miracle Paper Dish Rag and interesting samples for you and your friends.

KVP STANDS FOR "THE WORLD'S MODEL PAPER MILL"
KALAMAZOO VEGETABLE PARCHMENT CO.
KALAMAZOO MICHIGAN U.S.A.
MANUFACTURING WORLD-WIDE FAMOUS FOOD PROTECTION PAPERS

IF you are in any way interested in Electric or Gas Refrigeration
...read the above over twice because it will mean much to you. .. this is our National message to the American Housewife in cooperation with your refrigerator sales campaigns. Write for samples and advertising ideas that sell your refrigerators to new customers and keep old customers interested.

Wayne
ELECTRIC REFRIGERATOR



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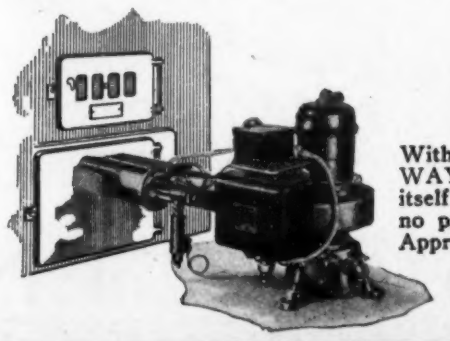
This means that every home is now a REAL PROSPECT! That wherever the housewife prefers to retain her own refrigerator—the Wayne electric refrigerating unit can be easily and quickly installed! Want to know more about it? Just drop us a line!



Oil Burners, Too!

With only one moving shaft, the New WAYNE OIL BURNER is in a class by itself! No carburetor, cams, floats, and no part of burner in or under fire box. Approved by National Fire Underwriters! Quick and Easy to install! Big profits for responsible dealers!

WAYNE HOME EQUIPMENT CO.
Fort Wayne, Indiana

If Side Lines are Necessary Choose Them With Care

By Frank W. Gray

SOME electric refrigeration dealers restrict their sales to domestic units, the demand for which is most active during the summer months. Other refrigeration dealers have resources in excess of the refrigeration sales possibilities in their localities and are forced to consider other lines of merchandise as a logical expansion of their businesses. Such dealers as mentioned above, in looking for other lines of merchandise to handle, should consider only lines which demand the same type of organization as electric refrigeration merchandising. Either such a kindred line must be selected, or sales activities must be strictly departmentalized in order to get results. For this is an age of specialized selling, and the old saying that a good salesman can sell anything does not always prove out in actual practice. A good salesman *can* sell anything, provided he goes through a suitable course of training, and provided he is allowed to concentrate his time and effort on that product without too much diversion.

Certain lines of merchandise adapt themselves more readily to the location, organization and resources of the average refrigeration dealer than others.

Wholesale Distribution

In many instances which have come to the writer's attention electric refrigeration dealers have taken over wholesale distribution for some line of merchandise, and have attempted to co-ordinate the functions of a distributor with those of a purely retail organization. The distributor discount is naturally higher than the dealer discount. This makes the distributor proposition look more attractive to the retailer. In certain industries, such as radio, gas and electric ranges, washing machines, household appliances, electrical specialties, and miscellaneous specialties, it is comparatively easy to secure a distributor franchise because of the large number of lines manufactured, some of which are almost certain to have no local representation.

The wholesale business, however, has highly developed functions of its own which do not co-ordinate well with those of retailing. And the retailer who considers a wholesale discount attractive must remember that the distributor proposition is generally available only on such lines of merchandise as are not already represented in his territory and for which he will have to pioneer a market. A good, well advertised, and well established line of merchandise is more productive of profits when purchased on the regular dealer discount, than most of the weak sister lines on which distributor franchises are readily available.

Radio Retailing

The above remarks are particularly applicable to the radio business. Radio is a luxury product which enjoys a popular demand during a comparatively short season. The radio distributor must organize with high efficiency in order to apportion his inventories, regulate his credits, create his dealer demand, and properly organize his merchandising service in order to reap the maximum profits during the short season. Obsolescence and change of models often depreciates radio inventories over night. Public taste is fickle, especially with regard to luxury products. And the inexperienced radio distributor is notorious for his handsome gross sales and his discouraging net losses.

If the electric refrigeration dealer considers radio as a subsidiary line, he will do well to select a line of radio which is well represented in his locality by a strong distributor—a line which is well advertised, for which there is an active local demand, and which is known to have good construction value. He can then depend upon the distributor to carry his stock for him, and to help him in the organization of his sales. Refrigeration salesmen who have specialized on domestic sales are particularly well fitted to merchandise a good line of radio receivers. The same aggressive customer contacts produce results in both radio and refrigeration. The unit of sale is approximately the same in radio as in electric refrigeration. The type of customer is much the same, and the home demonstration method of sale is used in both. A domestic electric refrigeration sales organization can easily be worked into radio sales during the fall months.

Oil Burners

The oil burner business is very much like the electric refrigeration business in that technical knowledge is needed as a background to oil burner sales, the sales activity must be aggressive, creative, and highly specialized, the unit of sale is only a little higher in oil burner sales, while installation and service are common to both. One difficulty in the blending of oil burner sales with electric refrigeration is that oil burner sales reach a peak season during the spring and summer months, at the same time that electric refrigeration must be pushed the hardest. This means that the same sales and service organizations cannot be efficiently used for both. Very few oil burner sales are made off the floor. The consumer must be contacted in his home or office. This requires highly specialized sales effort to create a market. Electric refrigeration salesmen ordinarily work well into oil burner sales, however, and vice versa, since most of the sales problems are common to both.

Washing Machines

In the past a great deal of money has been made in the retailing of washing machines. A great deal is still being made. But the washing machine business is not the virgin field that it was a few years ago. The sale of this household appliance has graduated for the most part from the field of the individual dealer into the electrical appliance departments of the central power stations, and into specially organized high pressure sales companies who get together large crews of commission men and sell in campaigns. Furniture stores and department stores also handle washing machines, and competition will be found firmly established. The trade-in problem has come to bear upon profits in the washing machine business, and the demonstration type of sale requires a fairly large investment in stock for the returns obtainable. Term payments are, of course, the customary basis of sale.

Gas and Electric Ranges

The range business is pushed very aggressively by the central power stations and the special stove companies. All department stores and furniture stores carry ranges, as well as hardware and some electrical dealers. The gas and electric range business has developed to a point where national advertising has developed certain established preferences in the buying public, and the individual dealer will do well to select a popular line or he will find his headway in this field rather slow.

The writer has seen one electric refrigeration agency which has made a pronounced success out of handling electrical and gas ranges with electric refrigeration. This agency has a large business in apartment house refrigeration installations, and its apartment house salesmen usually sell gas or electric ranges to the apartment house builder at the same time that they contact him for electric refrigeration. The ranges are usually included on the same contract with the refrigeration.

Musical Merchandise

Strange as it may seem, many musical firms are either handling electric refrigeration or considering it seriously as a subsidiary line. The writer has yet to see an instance of a refrigeration dealer going into the music business as a side line. Music dealers almost never create any volume of refrigeration sales, even in domestic units, unless they departmentalize their business in such a way that their electric refrigeration sales are highly specialized. The music business is in a state of depression just now. Phonograph sales have fallen off of recent years, due to the popularity of radio, and with the phonograph sales there has been, of course, a falling off in the sale of records and sheet music. Radio is highly seasonal, and many music houses are on the outlook for specialty lines, such as electric refrigeration, with which to boost their summer sales.

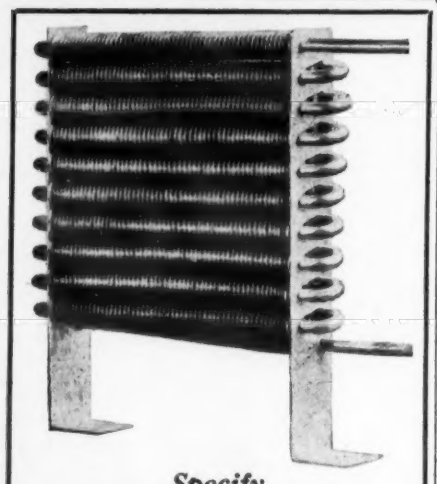
Store Fixtures

Store fixture companies, as a rule, are very well fitted to take on the sale of commercial electric refrigeration equipment. They are restrained from this field, however, by the fact that if they handle such equipment they encounter the ill will of electric refrigeration agencies whose co-operation is often beneficial to them. For this same reason electric refrigeration agencies will find considerable opposition in handling store fixtures, not only from competitive refrigeration agencies, but from store fixture companies as well, who might otherwise recommend their equipment. The combination of commercial refrigeration equipment with commercial refrigerators and display counters, however, is logical, and should work out in the hands of an aggressive organization.

Miscellaneous Specialties

The writer has seen innumerable instances of electric refrigeration dealers who are trying to handle various specialty products. Such lines usually include electric clocks, health exercisers, sporting goods, aluminum ware, portable phonographs, electrical appliances, cutlery, advertising novelties, toys, etc. Ordinarily, such lines, if handled in the usual desultory way, are not only unprofitable, but are actually a losing proposition for the dealer who is not thoroughly conversant with the competitive conditions that govern their sale. Such products require a division of capital and inventory, a scattering of effort in sales, and usually, being nondescript lines, the dealer does not make much headway with them against strongly intrenched competition.

Specialty items of this type are profitable only if the sales effort behind them is specialized in such a way that substantial volumes of sales are created and the management and buying are in experienced hands. This means certain salesmen to handle certain items, concentrating upon the trade who buy such items. New businesses are nearly always attractive to the uninitiated, and factory representatives who are anxious to get local sales representation contrive to make them more so. But no product is worth handling unless it can be seasoned by a steady volume of repeat business, and no sale franchise is worth having unless a dealer can build a basis for steady business by departmentalizing his management and sales organization.



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3. revolving air circulation

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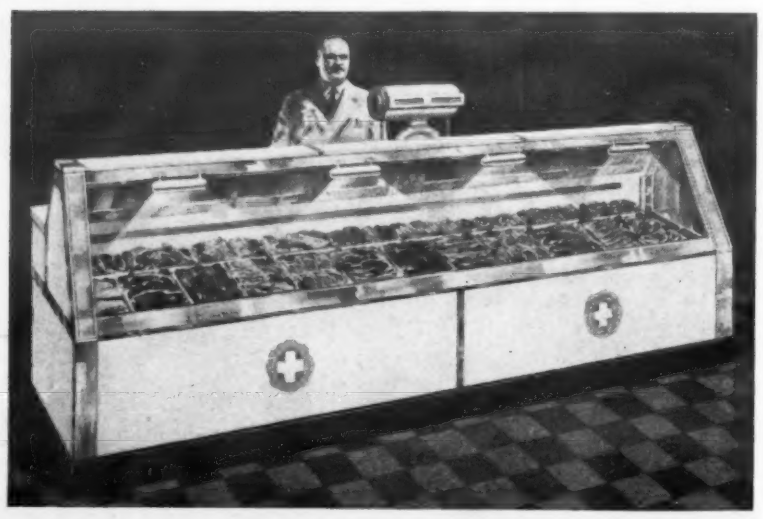
You get these three essentials of correct refrigeration in the new Hussmann 5100 Patented Quick Service Counter when properly refrigerated with a standard mechanical refrigeration unit.

Write us for full information about the Hussmann patented system.



HUSSMANN

Refrigerator Division

ALLIED STORE ASU UTILITIES CO.

General Offices—Saint Louis

Sales Representatives in all principal cities

READERS POINT OUT ERROR BY PRINTER

AMERICAN CARBONIC MACHINERY COMPANY
Refrigerating Machinery
2036 East 22nd Street
Cleveland, Ohio,
January 13, 1930.

Electric Refrigeration News,
Detroit, Mich.

In your issue of January 1st, under the Edison Co. report, we note on Page 32 a Table No. 3 giving the comparisons of various refrigerating gases. We note particularly that carbon dioxide is given as of the same class of hazard as ammonia, and the quantities given for gases to be equally dangerous are the same as for ammonia.

Will you please advise us the source of this table, as we are inclined to feel it is in error insofar as it refers to carbon dioxide, and the publication of such a table means nothing if it is not accurate in every way.

While we do not care to enter into any controversy with you on this subject, we would point out that other data indicates that a concentration of 15% of volume of carbon dioxide in air is not particularly dangerous, and we cannot accept this particular table as contributing anything constructive to the discussion and study of safety of refrigerants. Obviously one-half of one per cent to one per cent by volume of carbon dioxide could not "kill most animals in a very short time." If this were a fact, the soda fountain business would be one of the most hazardous, which is obviously silly.

We will very much appreciate your giving us the sources of this table, so that we can advise whoever made it up to discontinue guessing and run some tests. We would also think it very much to the point if your magazine would consult uninterested sources and correct the impression conveyed through the trade from reading this.

AMERICAN CARBONIC MACHINERY CO.
L. V. AVERY, District Manager.

CARBON DIOXIDE NOT TOXIC

THE LIQUID CARBONIC CORPORATION
General Offices, Factory
and Show Rooms
3100 South Kedzie Avenue
Chicago, Jan. 9, 1930.

Electric Refrigeration News,
Detroit, Mich.

Please refer to Table No. 3 at the bottom of page 32 of your January 1st issue, showing the "Physiological Response to Various Concentrations of Common Gases and Vapors." Item No. 8 is listed as carbon dioxide. We believe this is a mistake, and that the gas referred to is carbon monoxide.

We have sent to the United States Public Health Service for copy of the original bulletin, but feel positive that the facts are as mentioned above.

If this proves to be true, will you kindly see that the correction is printed in an early issue, as it would be a serious mistake to list carbon dioxide, the well known refrigerating gas, as a toxic material, such not being the case, although carbon monoxide has a decided toxic action.

J. H. PRATT,
Assistant Vice-President.

Correction

An article which appeared on page 32 of the January 1 issue of the NEWS, entitled, "Utility Survey of Electric Refrigeration," contains a table showing the physiological responses to common gases and vapors, in which reference was made to carbon dioxide. This should have appeared as carbon monoxide.

COOLING MAINTAINS AQUARIUM WATER AT EVEN TEMPERATURES

WHAT is said to be the best equipped and most modern aquarium in the world is located in Golden Gate Park in San Francisco, and known as the Steinhart Aquarium.

For the purpose of providing water at the proper temperatures for fish from all parts of the world, from the Arctic to the Tropics, there is installed a complete electric refrigerating plant and a complete heating plant.

The refrigerating plant provides water at a temperature of 50 to 52 degrees so that fish from cold waters will find water at the same temperature as that from which they came.

By means of a system of automatically controlled pumps, a filtering plant and large supply tanks, each exhibition tank is constantly being supplied with filtered water of the suitable temperature for the fish in that tank. There are four supply tanks of 20,000 gallons' capacity each, which are located above the exhibition tanks, so that water may be supplied to the exhibition tanks by gravity. From the supply tanks water percolates to each exhibition tank at the rate of two gallons per hour for each tank. An air pipe is extended to each of the exhibition tanks and is connected with a compressed air tank for use in aerating the water in case any of the circulating pumps should get out of order.

Normal control of the refrigerating plant is affected by means of a submerged type of thermostat, the control element of which projects into the water of the 20,000 gallon refrigerated tank over the exhibition tanks. This thermostat is readily adjusted for absolute temperature and for range of temperature, the means for which are located in the part of the thermostat projecting from the tank. A variation of a degree or two in the temperature of the refrigerated water causes the thermostat to make the appropriate contact either to start or to stop the refrigerating plant by means of the motor control in the engine room.

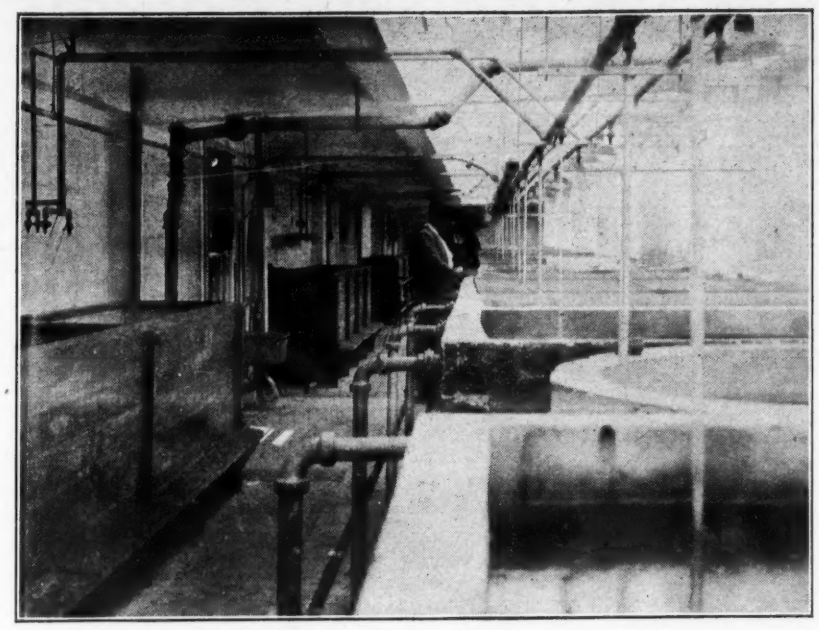
Abnormal control of the refrigerating plant is effected by means of an American Ice Machine Company automatic cut-off and safety relief valve connected between the discharge and suction headers. This automatic cut-off operates on a thermal principle instead of a pressure principle, thus providing protection not only against excessive pressure, but also against overheating of compressor cylinders in case of clogged water jackets. It not only stops the plant in case of abnormal conditions, but also starts it up again when conditions have returned to normal.

Two expansion circuits are installed, one feeding the ice water tank on the roof, and the other feeding a small refrigerator for the storage of food supplies (for those in charge of the aquarium who live in special apartments built into one end of the aquarium) each circuit controlled by an automatic adjustable expansion valve. The coils of the ice water tank, which is 6'-9" x 6'-9" x 6'-0" of 3/16" steel plate welded and insulated, with 4" of sheet cork laid in hot asphalt, consist of 600 feet of 1¼" welded pipe galvanized after welding. The coils of the refrigerator are of 1¼" black continuously welded pipe, placed in a galvanized tank and surrounded by a solution of calcium chloride brine of proper density to freeze at 15 degrees F. for the purpose of maintaining the temperature of the refrigerator by means of congealed brine during the periods of automatic shut-down.

The cycle of operation of the system is as follows: Water in the roof tank is chilled to the desired point, approximately 52 degrees F., by the above mentioned expansion coils. It flows thence by gravity to a distributing main above the thirteen cold water fish exhibition tanks, to which it is distributed by adjustable nozzles feeding the water through glass tubes, at the same time drawing air in, on the injector principle, to aerate the water. From the fish exhibition tanks the cold water overflows to a collecting main, thence to a sand filter in the engine room, and collects in a sump tank under the filter. From here it is pumped by a centrifugal pump back to the roof cooling tank. This pump, similarly to the other pumps, is controlled automatically by a float switch in the roof tank, the float being set to operate on a difference of water level of about one foot. All of the distributing pipes of this cold water are insulated with thick cork covering, and the fish tanks, filter and tanks are insulated with 2" sheet cork laid in hot asphalt.

An American automatic adjustable water control valve supplies water to the condenser and to the water jackets of the compressor. This valve is operated by the condenser pressure and opens proportionate to such pressure, when the plant is operating, and closes shortly after the plant shuts down. The compressor, supplied by the American Ice Machine Company of San Francisco, has four cylinders.

Fish Favor 50 Degree Campaign



Exhibition tanks in Steinhart Aquarium, San Francisco

Back Issues Now Available

DUE to the many requests for back issues of the NEWS, all available copies of Volumes I, II and III have been arranged in packages and are now obtainable for filing or binder purposes.

Volume I contains twenty-four issues, published between September 11, 1926, and August 31, 1927. Nineteen of the twenty-four issues in this volume are available and have been made into packages designated as 1-A; each package contains one copy of the following issues:

Oct. 30—Nov. 20—Dec. 8—Dec. 22, 1926; Jan. 5—Jan. 19—Feb. 2—Feb. 16—March 2— March 25—April 13—June 8—June 22—July 6—July 20—Aug. 3—Aug. 17—Aug. 31, 1927.

In ordering these back issues of Volume I, specify package 1-A. It will be sent postpaid to any U. S. address for $1.00. The five issues in Volume I not available are: Sept. 11—Oct. 6, 1926—March 16—May 11—May 25, 1927.

Volume II contains twenty-six issues, published between September 14, 1927, and August 29, 1928. Twenty-two of the twenty-six issues in this volume are available and have been made into packages designated as 2-A; each package contains one copy of the following issues:

Sept. 14—Sept. 28—Oct. 12—Oct. 26—Nov. 23—Dec. 7—Dec. 21, 1927—Jan. 4—Jan. 18—Feb. 1—Feb. 15—March 14—March 28—April 11—April 25—May 9—May 23—June 6—June 20—July 4—July 18—Aug. 15, 1928.

In ordering these back issues of Volume II specify package 2-A. It will be sent postpaid to any U. S. address for $1.00. The four issues in Volume II not available are: Nov. 9, 1927—Feb. 29—Aug. 1—Aug. 29, 1928.

Volume III contains twenty-six issues, published between September 12, 1928, and August 28, 1929. Seventeen of the twenty-six issues in this volume are available and have been made into packages designated as 3-A; each package contains one copy of the following issues:

Sept. 12—Sept. 26—Oct. 10—Oct. 24—Nov. 21—Dec. 5—Dec. 19, 1928—Jan. 2—Jan. 30—March 27—April 24—May 8—May 22—June 19—July 17—July 31—Aug. 14, 1929.

In ordering these back issues of Volume III specify package 3-A. It will be sent postpaid to any U. S. address for $1.00. The nine issues in Volume III not available are: Nov. 7, 1928—Jan. 16—Feb. 13—Feb. 27—March 13—April 10—June 5—July 3—Aug. 28, 1929.

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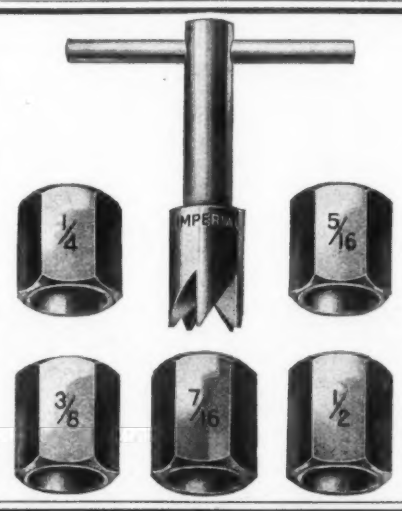

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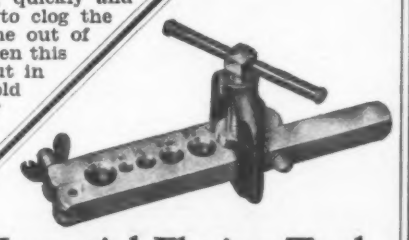
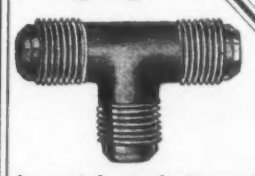
No. 100-F Refacing Tool with adapters for sizes ¼", 5/16", ⅜", 7/16" and ½". Per Set.... $3.75

Imperial Tube Cutter

Here is a highly efficient tool for cutting copper, brass, block tin and lead tubing. It takes all sizes of tubing from ⅛" to ⅝" and makes a right-angle cut, quickly and cleanly, leaving no burrs or chips to clog the line. The tubing does not become out of round as when put in a vise. When this tool is used, tubing can be cut in half the time required by old methods and a far better job results. No. 94-F Tube Cutter, each $2.50



Brass Forgings



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Imperial Flaring Tool

The Imperial Flaring Tool gives the proper flare and taper to the tubing for making up joints. A perfect flare means a tight joint, and this tool does the work in the least time and with the utmost simplicity. No loose dies—no vise necessary.

No. 93-F takes tubing sizes 7/16", 3/16", 1/4", 5/16", 3/8", and 1/2", each..... $3.00
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Imperial Tube Bender

Here is a simple but most efficient device for bending tubing to any degree desired. This tool was developed in our laboratory after many tests with every method known for bending tubing. With the Imperial Tube Bender a clean, workmanlike bend can be produced in a few seconds. This tool is light in weight and most simple to use. It consists of a coil of spring steel wire, with a flare at one end. To use, it is merely slipped over the tubing and brought to rest at the place where the bend is to be made. Then both tube and coil are bent by hand to whatever form desired. Seven Tube Benders comprise a complete set and each is strongly made, cadmium plated and will last a lifetime.

No. 101-F Tube Bender Set for tubing sizes, ¼", 5/16", ⅜", 7/16", ½" and ⅝". Per Set..... $2.75

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565 SOUTH RACINE AVE. - - - CHICAGO, ILL.

PIONEERING WORK ON ENCLOSED MACHINES DATES BACK TO 1897

By H. R. Van Deventer

THE enclosed motor type of unit may be defined as that in which the electric motor for driving the compressor is enclosed in a hermetically sealed chamber with the compressor, thereby eliminating the stuffing box or seal.

Several machines of this type have appeared on the market, notably the General Electric, the Allison or Holmes, the Utility and the Westinghouse.

But long prior to the American machines, enclosed motor machines were used in Europe, and one of the best known European machines is the Autofriger made by the Escher-Wyss Company of Zurich, Switzerland.

Mr. Zolley, the inventor of U. S. Patent No. 1,263,633, patented April 23, 1918, was evidently connected with the Escher-Wyss Company, and this patent relates to the Escher-Wyss machine. It covers several features of construction which have come into extended commercial use and is important for that reason.

The Zolley specification as filed June 13, 1917, is the same as that appearing in the patent, with the exception of a few immaterial changes.

In the application as originally filed, 7 claims appeared, claims 1 to 6 now appearing in the patent under these numbers. Claim 7 was rejected in the first action by the Patent Office as indefinite. It read: "7. An electric driven refrigerating plant, substantially described and illustrated in the accompanying drawing."

The Office action called attention to two patents: Ross 1,195,269 and Winkler 1,206,633.

By an amendment December 28, 1917, the above Claim 7 was canceled and Claims 7 to 10, which appeared in the patent, were inserted, and the case was then passed to issue.

The main feature disclosed by the Zolley patent is the thin steel cap or shell 4, enclosing the rotor 2. The lower rim of this cap 4 rests in a groove of the upper rim 5a of a casing 5, and is calked into this groove in an air-tight manner by means of a ring 5b, so that the cap 4 and the casing 5 form a unitary whole. The result is that no stuffing box or seal is needed on the shaft 1, for any gas that escapes upward into the space about the rotor is confined by the cap 4 and cannot escape from the machine.

Turning now to the reference patents, to see what limitations were imposed on the claims, the patent Ross 1,195,269 is very interesting as it, too, shows the equivalent of the steel cap 4 surrounding the rotor. This is shown in Fig. 1 of Ross and is termed by him as "Gas tight casing 13."

Ross shows in his Fig. 3 the stator as well as the rotor enclosed in the gas tight casing or housing 13a, and as Ross filed September 6, 1913, more than two years prior to Zolley, the claims of Zolley are necessarily limited by the Ross disclosures.

From the above two patents it will be observed that over ten years ago the so-called enclosed motor machine was conceived, and as a matter of fact, the Escher-Wyss machine was in use long prior to 1917, even in the United States.

The Zolley and Ross patents are by no means the earliest patents showing enclosed motor machines. One of the earliest United States patents was issued to W. F. Singer, 577,328, patented February 16, 1897, in which Motor H is totally enclosed in a casing.

Another patent to Singer, No. 597,532, dated January 18, 1898, shows the casing about the rotor, practically the equivalent of the Ross and Zolley patents.

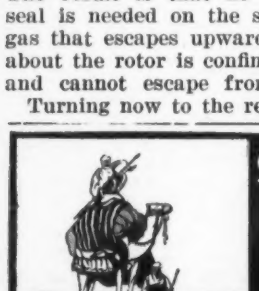
And, while from the foregoing it is evident that the broad idea of enclosing the motor, or a part thereof, in the gas chamber is old, there are many valuable details of construction which go to make up a commercial machine and particularly a unit that can be manufactured at low cost and which will be free from service troubles on which patents exist, and it is by no means easy at this time in the development of the enclosed motor machine to design one that will be free from the numerous patents and applications now owned by the several groups who have been building patent situations in this field.

In respect to other features of the Zolley patent, these relate mainly to the arrangement of the various chambers within the machine whereby the oil is collected and is carried by the compressed refrigerant and poured over the surfaces needing lubrication.

The machine shown in the Zolley plant was water cooled, but such machines can be readily made air cooled.

Claim 9 of the Zolley patent is rather broad in connection with water-cooled machines. It reads:

"9. In a self-contained refrigerating machine an armature and its shaft, a plurality of chambers co-axial with said armature and shaft, a compressor driven from said shaft, a water jacket surrounding several of the aforesaid chambers and spaced therefrom, means to inclose the armature gas tight and a stator surrounding said means."



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Recent Patents in the Field

ISSUED DECEMBER 24

1,740,503—DEVICE FOR FORMING ICE CUBES. Donald H. Fry, Los Angeles, Calif. Filed Sept. 1, 1928. Serial No. 303,386. 2 Claims. (Cl. 62—111.)

1,740,509—DEVICE FOR COOLING LIQUIDS. Louis W. Hassensall, Toledo, Ohio. Original application filed April 20, 1928. Serial No. 271,625. Divided and this application filed Nov. 30, 1928. Serial No. 322,828. 6 Claims. (Cl. 62—92.)

1. A cooling device to be disposed within a water container comprising a receptacle adapted to contain frozen gas, said receptacle being open at its top and having a flat bottom whereby the receptacle may rest upon the bottom of the water container in an upright position, a cover for said receptacle removably engaged therewith and having a tubular neck constituting an outlet neck when the cover is applied to the receptacle, a discharge pipe connected with said neck, and a hollow terminal connected with said pipe and adapted to be secured in an opening formed in the container.

1,740,585—WATER COOLER. John N. Gennis, Houston, Tex. Filed Aug. 12, 1927. Serial No. 212,589. 2 Claims. (Cl. 62—45.)

1,740,646—MILK-COOLING APPARATUS. James Riley Davis, Newport, Vt. Filed Aug. 4, 1928. Serial No. 297,488. 3 Claims. (Cl. 31—4.)

3. In fluid straining and cooling apparatus, a cooling element receptacle having an outer wall and an open top, an open topped chamber extending into the receptacle through the open top thereof and having outlets near its upper end, means combining with the upper end of the chamber to produce an outlet compartment upon the upper end thereof, said outlet compartment having outlet openings discharging the fluid against the upper end of the exterior wall of the receptacle, and a strainer extending into the chamber through the open top thereof to a point adjacent the lower end of the chamber, said strainer having outlets adjacent its lower end and having an open top whereby fluid may be introduced therethrough and admitted at the lower end of the chamber, said strainer having an exteriorly applied heat insulation extending from a point above the outlets thereof to a point adjacent the level of the outlets of the chamber.

1,740,737—REFRIGERATING DEVICE. David Forbes Keith, Toronto, Ontario, Canada. Filed June 27, 1927. Serial No. 201,904. 35 Claims. (Cl. 62—120.)

1. In combination, a refrigerator box, and a removable refrigerating unit therefor, said box having an opening therein, a groove in the upper edge of the wall about said opening, said unit having its portions connected together solely by means containing the passageways between the portions, said means arranged to fit in said groove, for the purpose described.

1,740,848—REFRIGERATING UNIT FOR ATTACHMENT TO ICE BOXES. Miner P. Wetmore, Norwich, Conn. Filed Apr. 6, 1928. Serial No. 268,011. 13 Claims. (Cl. 62—92.)

1. The method of cooling a heat-insulated porous block of rigid material by introducing refrigerating gas into the block simultaneously at a plurality of distributed points from which the gas permeates the block and gradually escapes through the pores thereof into the surrounding space.

1,740,919—FLEXIBLE SHARP-FREEZING CONTAINER. Lloyd G. Copeman, Flint, Mich., assignor to Copeman Laboratories Company, Flint, Mich., a Corporation of Michigan. Filed Oct. 5, 1928. Serial No. 310,556. 6 Claims. (Cl. 62—111.)

1. As a new article of manufacture, a sharp-freezing container formed of flexible material, the outer walls of said container being provided with a lip extending above the normal level of the liquid to be frozen.

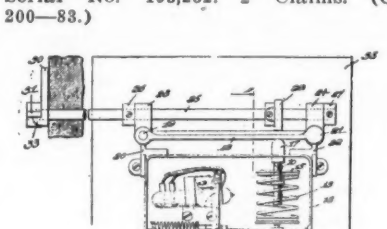
1,740,924—COMPRESSOR. Herbert C. Kellogg, Detroit, Mich. Original application filed Mar. 9, 1925. Serial No. 219,900. 17 Claims. (Cl. 230—54.)

1. In compressor apparatus of the class described, the combination of fluid receiving shells supported in alignment, compressor cylinders supported by opposite ends of the shells, pistons in said cylinders, a central transverse dividing member between said shells and to which said shells are secured, extensible members connected to said pistons and to said central dividing member, and valve mechanism carried by said central dividing member for controlling the admission and discharge of a working fluid to and from said extensible members.

1,741,053—ICE-CUTTING MACHINE. Adolph O. Goldstein, Santa Cruz, Calif., assignor to Sno-Ko Inc., Santa Cruz, Calif., a Corporation of California. Filed Aug. 24, 1927. Serial No. 215,229. 1 Claim. (Cl. 83—62.)

ISSUED DECEMBER 31

1,741,237—TEMPERATURE REGULATOR FOR MECHANICAL REFRIGERATORS. Ernest G. Hodgkins, Newton Center, Mass. Filed May 21, 1927. Serial No. 193,232. 2 Claims. (Cl. 200—83.)



1. A temperature regulator for mechanical refrigerators having, in combination, a control comprising a spring, an abutment, a follower carried by the abutment for opposing the pressure of the spring having provision for adjustment on the abutment to regulate the normal chest temperature, a cam having a low part and a high part, co-operating with the abutment when turned to move to its position, the high part of the cam providing a support for the abutment in position, to maintain the normal chest temperature, and the low part of the cam operating to support the abutment for low chest temperature.

1,741,330—THERMOMETER. Harry Y. Norwood, West Rush, N. Y., assignor to Taylor Instrument Companies, Rochester, N. Y., a Corporation of New York. Filed Jan. 26, 1928. Serial No. 249,575. 2 Claims. (Cl. 49—82.)

1,741,377—INSULATING WRAPPER. George R. Scarlett, Kennett Square, Pa., asignor to The Glacifer Corporation, Kennett Square, Pa., a Corporation of Delaware. Filed July 27, 1928. Serial No. 295,816. 5 Claims. (Cl. 229—87.)

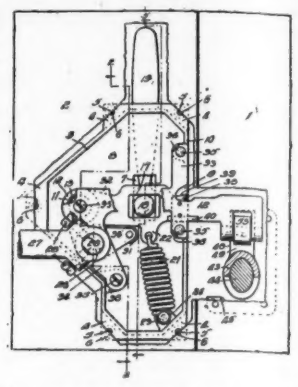
1. An insulating wrapper embodying an outer main sheet elongated in length and width, and an inner flexible soft pad that includes a thick fibrous mass layer providing insulation against heat exchange, and pad coupled to the outer sheet and arranged on the inner side thereof, said wrapper adapted to be rolled up enclosing the article and refrigerant and to be tucked in to cover the ends of the space occupied by the article and refrigerant, with the insulating pad surrounding said space.

1,741,458—BRINE TANK. Harold A. Greenwald, Detroit, Mich., assignor to Thomas C. Whitehead, Detroit, Mich. Filed May 24, 1926. Serial No. 111,460. 4 Claims. (Cl. 62—95.)

3. A brine tank formed entirely of vitreous material and comprising a hollow open top body provided at its opposite ends with depending hollow upwardly opening leg portions, and a shelf extending between said leg portions and forming therewith a compartment for receiving trays in which ice may be formed.

1,741,495—DECK FOR COOLING TOWERS. James P. Barry, Piedmont, Calif., assignor to The Little River Redwood Co., San Francisco, Calif., a Corporation of Delaware. Filed July 18, 1928. Serial No. 293,601. 5 Claims. (Cl. 261—110.)

1,741,546—REFRIGERATOR LATCH. Carl G. Strotz, St. Louis, Mo. Filed Sept. 5, 1925. Serial No. 54,682. 10 Claims. (Cl. 292—224.)

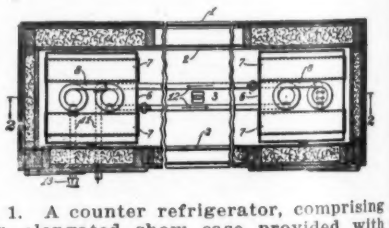


1. In a refrigerator latch structure, a casing, a back plate for the casing, a keeper, a spring actuated pivotally mounted and laterally movable latch member having an opening therein partly disposed within the casing and adapted to co-operate with the keeper to retain a refrigerator door in its closed position, a pivotally supported outside handle having its inner end disposed in said latch opening, and in direct contact with the latch member for raising the latch member for disengagement with the keeper, a shoulder plate removably fixed to the back plate for retaining the latch member in its raised position when disengaged from the keeper, and an adjustable forwardly directed element disposed above and to the rear of the keeper which the latch member is adapted to strike against when closing the door for removing the latch member from the shoulder plate for permitting it to fall behind and in engagement with the keeper.

1,741,563—BOTTLE COOLER AND DISPENSER. Frank M. Graham, Ottumwa, Iowa. Filed Aug. 2, 1926. Serial No. 126,400. 6 Claims. (Cl. 312—36.)

1. In a device of the class described, a casing having a cooling compartment, a series of bottle slides in said compartment each having a fixed inclined end wall, movable doors above the ends of said slides, a refrigerant compartment communicating with said cooling compartment and means for supporting said slides above the bottom of the cooling compartment.

1,741,568—COUNTER REFRIGERATOR. Alfred J. Heyer, St. Louis, Mo., assignor, by mesne assignments, to Hussman-Ligonier Company, St. Louis, Mo., a Corporation of Delaware. Filed Aug. 26, 1922. Serial No. 584,425. 5 Claims. (Cl. 62—37.)



1. A counter refrigerator, comprising an elongated show case provided with transparent panels, a brine-receiving unit having an expansion coil and mounted at one end of the show case, an auxiliary refrigerating element extending along the bottom of the show case, and refrigerating medium connections to said coil, said unit being constructed and arranged to promote circulation of air therethrough and along the back thereof, and said unit facing the show case and being in aerial communication with the show case compartment, whereby a current of air is caused to circulate in a path from the bottom of said unit along the bottom of the show case and in a return path along the top of the show case to the top of said unit.

1,741,580—VENTILATING AND REFRIGERATING APPARATUS. Charles A. Moore, Edina, Minn. Filed Aug. 15, 1924. Serial No. 732,345. Renewed Sept. 28, 1925. 7 Claims. (Cl. 257—18.)

6. The combination with a structure forming a lading chamber, of an elevated supply duct opening into the chamber, an elevated return duct communicating with the interior of the chamber near the ceiling, an upright air conditioning conduit, air refrigerating means associated therewith, said conduit communicating at its upper end with the outer air and at its lower end with said supply duct, an upright exhaust conduit communicating at its upper end with said return duct and at its lower end with the outer air, and a fan associated with said conditioning conduit for impelling air therethrough and building up an internal pressure within the room for stimulating the flow of air through the exhaust conduit.

1,741,594—WATER-COOLING UNIT FOR ELECTRIC REFRIGERATORS. Frank Roswell Volimer, Reading, Pa. Filed June 21, 1927. Serial No. 200,383. 2 Claims. (Cl. 62—141.)

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PERISHABLE FOODS

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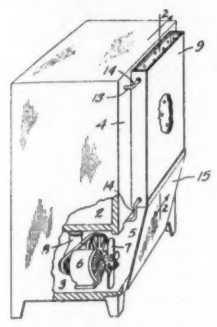
# of Refrigeration

2. In a water cooling attachment for electric refrigerators of the type including an ice making cabinet suspended from a refrigeration unit, a circuitous water conductor having portions, one on each side of the cabinet, means for suspending the water conductor from the refrigeration unit, means for delivering water into one end of the conductor, and means for taking water from the other end thereof.

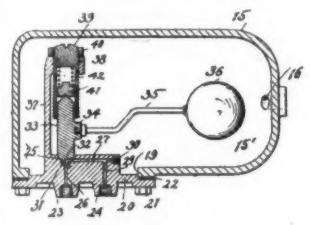
1,741,630—REFRIGERATOR CAR. George A. Hull, Chicago, Ill., assignor to Equipment Specialties Co., Chicago, Ill., a Corporation of Illinois. Filed Jan. 19, 1927. Serial No. 162,001. 15 Claims. (Cl. 62—19.)

1,741,638—REFRIGERATOR. Thomas J. Litle, Jr., Detroit, Mich., assignor to Copeland Products, Inc., Detroit, Mich., a Corporation of Michigan. Filed Aug. 12, 1926. Serial No. 128,724. 7 Claims. (Cl. 62—116.)



1. In a mechanically cooled refrigerator cabinet having an opening in the lower portion of a vertical wall thereof, a condenser forming a flue positioned along the upper portion of said wall, a motor proportioned in the lower portion of said refrigerator, having a compressor operatively connected thereto and having a fan thereon for driving currents outwardly through sand opening in said wall of said refrigerator and means for guiding said air currents into said flue.

,741,652—REFRIGERATION APPARATUS. Olaf C. Olsen, Dayton, Ohio, assignor of two-thirds to The Borden Company, Warren, Ohio, a Corporation of Ohio. Filed Nov. 5, 1927. Serial No. 231,266. 5 Claims. (Cl. 62—8.)



1. Control mechanism for refrigerating systems, comprising a chamber adapted to be connected into the discharge line of the refrigerating unit, said chamber having in one wall thereof a valve seat opening into the interior of the chamber, a rotary valve for said seat having a shank projecting into the chamber, said wall having a passage therein intercepting said valve seat and adapted to be connected into the intake line of the refrigerating unit, and means within the chamber for holding the valve to its seat for operating the valve.

1,741,892—THERMOSTAT. Frederick C. Volkman, Baltimore, Md., assignor of one-third to Kenneth H. Kiefer and Sidney C. Vincent, Baltimore, Md. Filed June 9, 1926. Serial No. 114,758. Renewed May 20, 1929. 4 Claims. (Cl. 236—102.)

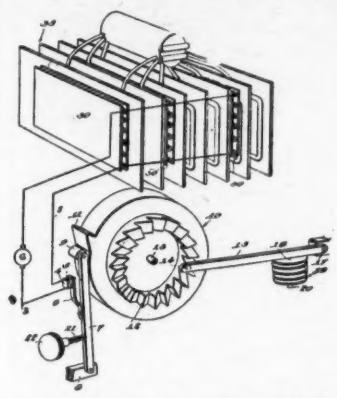
1,751,961—LEG CONSTRUCTION FOR WATER COOLERS. Morris Stein and Abraham S. Levin, Philadelphia, Pa. Filed Dec. 24, 1925. Serial No. 77,482. 2 Claims. (Cl. 45—48.)

2. In a water cooler of the character stated, a body portion, legs carried at the corners thereof, comprising a pair of right angled flanges, a pair of supporting brackets carried by each of said legs, each comprising a vertical web secured to the respective flange of the leg, a horizontal flange adapted to support the body of the cooler and a free inclined web intermediate, said vertical web and said horizontal supporting flange adapted to impart resiliency to the latter; the horizontal flanges and inclined webs of the adjacent brackets on each leg being mitred along their contacting edges.

1,741,989 — REFRIGERATOR COIL MOUNTING. Colvin L. Johnson, St. Louis, Mo., assignor to Johnson Automobile Lock Co., St. Louis, Mo., a Corporation of Missouri. Filed Feb. 17, 1927. Serial No. 168,936. 8 Claims. (Cl. 62—95.)

3. Supporting means for mounting a refrigerator unit in various sizes of ice compartments comprising a pair of extensible bars including aligned members having means on the ends thereof adapted to engage opposite walls of the ice compartment, means adapted to force said aligned members apart to engage the opposite walls of the ice compartment and mounting means for said unit connected to said bars in such a manner as to cause said refrigerator unit to hand from said bars.

1,742,062—ELECTRIC DEFROSTER FOR REFRIGERATING COILS. William B. Day, Lexington, Ky., assignor of one-half to Kathyrn W. Renick, Winchester, Ky. Filed Dec. 15, 1927. Serial No. 240,256. 7 Claims. (Cl. 62—116.)



1. The combination with a refrigerating coil; of an electric heating coil arranged in close proximity thereto, and automatically operated means for energizing said heating coil at intervals whereby the refrigerating coil is freed from snow and ice.

1,742,119—MILK-COOLING DEVICE. Sam Adamy, Wellsboro, Pa., assignor of one-half to Otis H. Evans, Wellsboro, Pa. Filed Jan. 23, 1928. Serial No. 248,904. 1 Claim. (Cl. 257—206.)

1,742,122—APPARATUS FOR USE IN THE MANUFACTURE OF ICE. Anson J. Bentley, Niles, Ohio. Filed Nov. 12, 1925. Serial No. 68,507. 7 Claims. (Cl. 62—157.)

1,742,171—PROCESS OF MANUFACTURING ICE CREAM OR THE LIKE. Clarence W. Vogt, Louisville, Ky., assignor to Vogt Instant Freezers, Inc., Louisville, Ky., a Corporation. Original application filed Jan. 18, 1927. Serial No. 161,844. Divided and this application filed Jan. 27, 1928. Serial No. 249,907. 18 Claims. (Cl. 62—174.)

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San Francisco, Calif.—The National Canners' Association Research Laboratory in San Francisco, which is said to be he largest and best equipped food research laboratory in the world, serves canners of the intermountain and Pacific Coast region in solving their many problems relative to new varieties of outputs, and to assure high quality of Pacific Coast products. This laboratory has been in operation for four years, aiding Pacific Coast packers in solving their many problems and in studying over 75 different food products.

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The Inquiring Statistician

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Detroit, Mich.

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Yearly sales (all manufacturers)?
Increase or decrease?
Principal competitive products?
Number manufacturers making mechanical refrigeration?
Sales channels?
Number sales outlets?
Number units manufactured?
Principal need for product?
Source of raw materials?
Scarcity or surplus of raw materials?
Potentialities?
Retail price range?
Manufacturing profit?
Jobbing profit?
Dealer profit?
How packaged?
Advertising appropriation?
Per cent spent in newspapers?
Per cent spent in magazines?
Per cent spent in outdoor?
Per cent spent in dealer helps?
Per cent spent in direct mail?
Per cent spent in all other media?

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NORTHEASTERN RADIO NAMED COPELAND DISTRIBUTOR IN BOSTON

Boston, Mass.—Northeastern Radio, Inc., 269 Columbus Ave., has been appointed Copeland distributor for this territory, succeeding Beaudette & Graham.

F. B. TRUNK NAMED DIVISION MANAGER OF BAKER CO.

The Baker Ice Machine Co., Inc., of Omaha, Nebr., recently appointed F. B. Trunk as division manager for Colorado, Wyoming, New Mexico, Utah and Idaho. His headquarters will be Denver. Paul Hupp will be resident representative in Utah and Idaho, with headquarters at Salt Lake City.

NEW SHOWROOM OPENED BY DES MOINES FRIGIDAIRE

Des Moines, Iowa—The local Frigidaire sales branch has opened a new uptown showroom on West Locust St.

U. S. Total of Wired Homes Shows Big Increase in 1929

(*From Electrical World*)

	Domestic Lighting Customers		
	1928	1929	Increase in 1929
UNITED STATES	18,833,970	19,721,486	887,516
New England	1,745,416	1,823,152	77,736
Middle Atlantic	5,340,253	5,597,913	256,940
East North Central	4,632,759	4,856,059	223,300
West North Central	1,832,524	1,902,024	69,500
South Atlantic	1,326,079	1,401,449	75,370
East South Central	600,256	632,496	32,240
West South Central	924,392	974,092	49,700
Mountain	511,601	530,321	18,720
Pacific	1,920,690	2,004,700	84,010
NEW ENGLAND			
Maine	135,512	140,868	5,356
New Hampshire	97,020	98,010	990
Vermont	75,036	77,516	2,400
Massachusetts	937,734	987,804	50,070
Rhode Island	151,305	153,135	1,830
Connecticut	348,809	365,819	17,010
MIDDLE ATLANTIC			
New York	2,698,803	2,837,723	138,920
New Jersey	900,450	962,110	61,660
Pennsylvania	1,741,000	1,797,360	56,360
EAST NORTH CENTRAL			
Ohio	1,247,290	1,318,790	71,500
Indiana	546,480	566,280	19,800
Illinois	1,496,900	1,555,200	58,300
Michigan	889,473	939,633	50,160
Wisconsin	452,616	476,156	23,540
WEST NORTH CENTRAL			
Minnesota	375,050	382,820	7,770
Iowa	361,486	378,676	171,190
Missouri	518,232	534,972	16,740
North Dakota	48,443	51,813	3,370
South Dakota	64,500	66,780	2,280
Nebraska	191,690	201,770	10,080
Kansas	273,123	285,193	12,070
SOUTH ATLANTIC			
Delaware	28,886	30,516	1,630
Maryland	237,967	253,617	15,650
Dist. of Columbia	102,224	111,344	9,120
Virginia	197,096	210,486	13,390
West Virginia	134,610	148,130	13,520
North Carolina	179,856	191,206	11,350
South Carolina	77,745	81,565	3,820
Georgia	163,920	178,390	8,470
Florida	197,775	196,195	1,580
EAST SOUTH CENTRAL			
Kentucky	208,540	221,860	13,320
Tennessee	183,566	194,386	10,820
Alabama	140,310	145,820	5,510
Mississippi	67,840	70,430	2,590
WEST SOUTH CENTRAL			
Arkansas	97,152	100,022	2,870
Louisiana	135,740	140,720	4,980
Oklahoma	201,250	216,560	15,310
Texas	490,250	516,790	26,540
MOUNTAIN			
Montana	67,922	71,302	3,380
Idaho	63,014	66,124	3,110
Wyoming	27,134	28,084	950
Colorado	161,996	163,436	1,440
New Mexico	24,035	25,115	1,080
Arizona	48,552	52,872	4,320
Utah	105,882	109,472	3,590
Nevada	13,066	13,916	850
PACIFIC			
Washington	380,000	400,080	20,080
Oregon	187,420	196,270	8,850
California	1,353,270	1,408,350	55,080

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CORRECT refrigerator insulation demands a material of high insulating efficiency, continuous durability, sturdiness, light weight, and it must be odorless. Insulite has all of these features and many other additional advantages.

Insulite is a wood-fiber product chemically treated to resist moisture and is not subject to deterioration, rot, mold, or disintegration. It is odorless and will not absorb odors. Although light in weight, Insulite has great structural strength—wood framing can be reduced to a minimum.

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Scientific and Historical Data
of the
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A CLEAR explanation of the scientific laws on which mechanical refrigeration is based and the historical background of the refrigeration industry are given in the court proceedings in the famous

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The complete proceedings of the trial, which took place at Bay City, Michigan, March 18-23, 1929, together with the official decision of Judge Tuttle, have been reprinted in a 48-page special supplement.

The expert testimony recorded in this document furnishes a most illuminating exposition of the various refrigeration processes and a valuable picture of the historical development of the industry.

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